CITY OF BELMONT

SAN MATEO COUNTY, CALIFORNIA
PROJECT PLANS FOR CONSTRUCTION

RALSTON AVENUE CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 AND 2

CITY CONTRACT NUMBER 2019-578

CITY COUNCIL

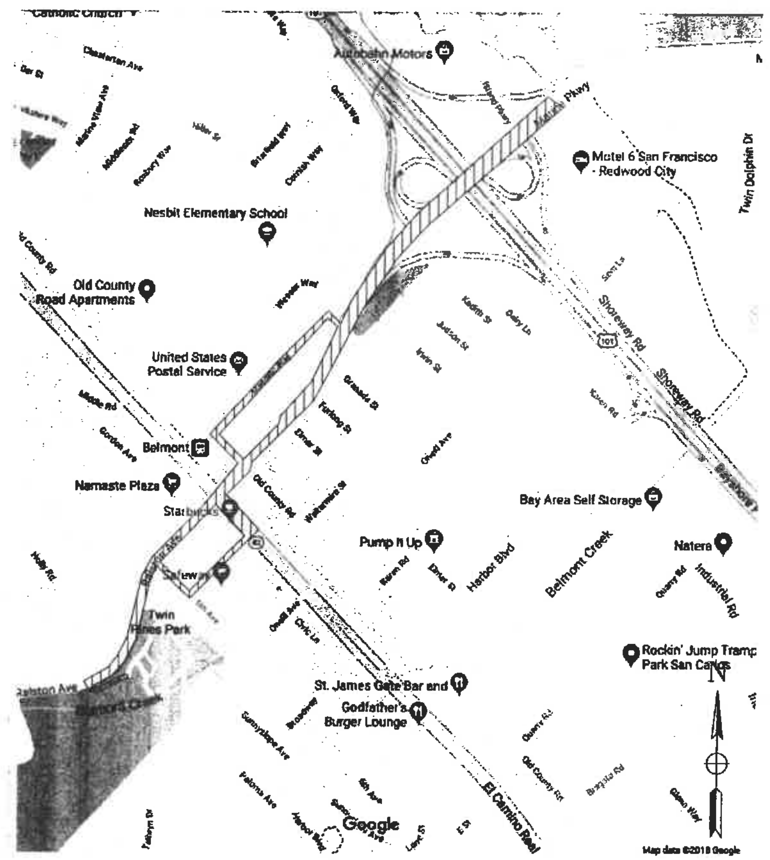
MAYOR	DAVINA HURT
VICE MAYOR	WARREN LIEBERMAN
COUNCIL MEMBER	DOUG KIM
COUNCIL MEMBER	CHARLES STONE
COUNCIL MEMBER	JULIA MATES

STAFF

CITY MANAGER	GREG SCOLES
DIRECTOR OF PUBLIC WORKS	AFSHIN OSKOUI
ASSISTANT PUBLIC WORKS DIRECTOR/ CITY ENGINEER	LETICIA ALVAREZ
CITY ATTORNEY	SCOTT RENNIE
CITY CLERK	TERRI COOK

APPROVED BY CITY COUNCIL ON MARCH 26, 2019
RESOLUTION NUMBER: 2019-032

Leticia Alvarez for:
AFSHIN OSKOUI - DIRECTOR OF PUBLIC WORKS



LOCATION MAP
NOT TO SCALE

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1-800-227-2600

AGENCY INDEX
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CITY OF BELMONT
BELMONT, CALIFORNIA

No.	Revision	Date	By	Chkd

Date: March 29, 2019
Drawn By: AM
Designed By: AP

TITLE SHEET

DEPARTMENT OF PUBLIC WORKS
CITY CONTRACT NO. 2019-578

SCALE: AS SHOWN

SHEET: 1 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\Ralston Corridor Seg 1 and 2- cover page.dwg

STRIPING NOTES

1. SIGNING AND STRIPING SHALL CONFORM TO THE CITY OF BELMONT REQUIREMENTS, APPLICABLE DETAILS OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) 2018 STANDARD PLANS, STANDARD SPECIFICATIONS, LATEST EDITION OF THE CALIFORNIA MUTCD, SIGN SPECIFICATIONS SHEETS, AND THE SPECIFICATIONS.

2. ALL STRIPING SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED. ALL TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE APPLIED AT A THICKNESS OF 0.150 INCH.

3. ALL CROSSWALK AND STOP BAR STRIPES SHALL BE 12" WHITE STRIPES UNLESS OTHERWISE NOTED ON THE PLANS. ALL CROSSWALKS SHALL BE 11' O.C. IN WIDTH UNLESS OTHERWISE NOTED ON THE PLANS.

4. CONTRACTOR TO PROVIDE SIGN PROOFS TO CITY FOR APPROVAL PRIOR TO MANUFACTURING OF ANY PROPOSED SIGNS ON THIS PLAN.

5. CONTRACTOR TO ADD PRIMER ON ROADWAY PRIOR TO INSTALLING ANY NEW THERMOPLASTIC STRIPING.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIRED CLEARING AROUND SIGNAGE WITH COORDINATION FROM THE CITY.

7. REFER TO CIVIL SHEETS FOR ADDITIONAL STRIPING WORK AND NOTES NOT SHOWN WITHIN THE STRIPING PLAN.

LEGEND

- INSTALL NEW SIGN
- EXISTING SIGN TO REMAIN
- INSTALL NEW THERMOPLASTIC STRIPING PER DETAIL NUMBER
- EXISTING STRIPING TO REMAIN
- REMOVE EXISTING STRIPING
- TYPE I ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
- TYPE II (L) ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24B
- TYPE III (L) ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24B
- TYPE IV (L) AND (R) ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
- TYPE VII (L) AND (R) ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
- STOP — "STOP" PAVEMENT MARKING PER CALTRANS STD PLAN A24D
- "BIKE LANE SYMBOL" PAVEMENT AND ARROW MARKING PER CALTRANS STD PLAN A24A AND A24C
- BIKE LANE ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
- "SHARED ROADWAY BICYCLE" PAVEMENT MARKING PER CALTRANS STD PLAN A24C CENTERED IN TRAVEL LANE
- BIKE LOOP DETECTOR PAVEMENT MARKING PER CALTRANS STD PLAN A24C CENTERED IN TRAVEL LANE
- XX' (XX) — (LENGTH OF DETAIL) STRIPING DETAIL
- XX' (XX) — (LENGTH OF DETAIL) EXISTING STRIPING DETAIL
- CONFORM TO EXISTING
- CHANGE IN STRIPING DETAIL
- YELLOW PAVEMENT MARKER
- PARKING SPACE MARKINGS

GENERAL CIVIL NOTES

1. THE CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

2. THE ENGINEER ASSUMES NO RESPONSIBILITY BEYOND THE ADEQUACY OF THE DESIGN CONTAINED HEREIN.

3. THE CONTRACTOR SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE CAL/OSHA STATE OF CALIFORNIA CONSTRUCTION SAFETY ORDERS.

4. SHOULD IT APPEAR THAT THE WORK TO BE DONE, OR ANY MATTER RELATIVE THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.

5. ALL WORK SHALL CONFORM TO THE CURRENT CITY OF BELMONT ORDINANCES (UNIFORM CONSTRUCTION STANDARDS) AND THE STANDARD SPECIFICATIONS OF THE CITY OF BELMONT AND THE STATE OF CALIFORNIA.

6. THE CONTRACTOR SHALL SUBMIT TO THE CITY AND HAVE IN THE SUPERINTENDENT'S VEHICLE, EMERGENCY TELEPHONE NUMBERS FOR POLICE, FIRE, AMBULANCE, AND THOSE AGENCIES RESPONSIBLE FOR MAINTENANCE OF UTILITIES IN THE VICINITY OF THE JOB SITE.

7. EMERGENCY PHONE NUMBERS TO REACH CONTRACTOR SHALL BE GIVEN TO CITY OF BELMONT PUBLIC WORKS DEPARTMENT.

8. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY.

9. EXCAVATIONS SHALL BE ADEQUATELY SHORED, BRACED AND SHEETED SO THAT THE EARTH WILL NOT SLIDE OR SETTLE AND SO THAT ALL EXISTING IMPROVEMENTS OF ANY KIND WILL BE FULLY PROTECTED FROM DAMAGE. ANY DAMAGE RESULTING FROM A LACK OF ADEQUATE SHORING, BRACING AND SHEETING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND HE SHALL AFFECT NECESSARY REPAIRS OR RECONSTRUCTION AT HIS OWN EXPENSE. WHERE THE EXCAVATION FOR A CONDUIT TRENCH AND/OR STRUCTURE IS FIVE FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING, SHORING AND BRACING OR EQUIVALENT METHOD FOR THE PROTECTION OF LIFE OR LIMB, CONFORMING TO THE APPLICABLE CONSTRUCTION SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY OF THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL ALWAYS COMPLY WITH OSHA REQUIREMENTS.

10. ALL WORK SHALL BE PERFORMED IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND SPECIAL PROVISIONS.

11. NO WORK SHALL BE DONE ON THIS PROJECT PRIOR TO A PRE-CONSTRUCTION CONFERENCE TO BE HELD WITH THE PUBLIC WORKS DEPARTMENT AND ENGINEER.

12. EQUIPMENT SHALL NOT BE STORED ON OR WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR WRITTEN APPROVAL FROM THE CITY ENGINEER. IF PERMITTED, EQUIPMENT SHALL BE SECURED AND LOCKED WITH PROTECTIVE COVERS IN PLACE. ADEQUATE BARRICADES WITH OPERABLE FLASHERS SHALL BE INSTALLED AROUND THE EQUIPMENT AND REMAIN IN WORKING ORDER AT ALL TIMES.

13. THE CONTRACTOR SHALL INFORM THE CITY ENGINEER 48 HOURS IN ADVANCE OF THE TIME HE REQUIRES AN INSPECTOR, INCLUDING FORM WORK REVIEW AND APPROVAL.

14. THE FOLLOWING CONTROL MEASURES FOR GRADING AND CONSTRUCTION ACTIVITIES SHALL BE ADHERED TO, UNLESS OTHERWISE APPROVED BY THE CITY:

    A. GRADING AND CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS OF 8 AM TO 5 PM ON WEEKDAYS; THERE SHALL BE NO GRADING OR CONSTRUCTION ACTIVITIES ON THE WEEKENDS OR CITY HOLIDAYS.

    B. GRADING AND CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MUFFLED.

    C. UNNECESSARY IDLING OF GRADING AND CONSTRUCTION EQUIPMENT IS PROHIBITED.

    D. NOISE-GENERATING STATIONARY CONSTRUCTION EQUIPMENT, SUCH AS COMPRESSORS, SHALL BE LOCATED AS FAR AS PRACTICAL FROM OCCUPIED RESIDENTIAL HOMES.

    E. CONSTRUCTION TRASH AND DEBRIS SHALL BE CLEANED UP DAILY.

    F. ALL UNPAVED ACCESS ROADS, PARKING AREAS AND CONSTRUCTION STAGING AREAS SHALL BE WATERED OR TREATED WITH (NON-TOXIC) SOIL STABILIZERS, AS NECESSARY TO PREVENT AIRBORN DUST.

    G. CONSTRUCTION SITES SHALL BE KEPT CLEAN AT ALL TIMES. AT NO TIME SHALL THE CONTRACTOR OR PERMIT HOLDER BE ALLOWED TO LEAVE THE SITE PRIOR TO THOROUGHLY CLEANING SIDEWALKS, CURBS, GUTTERS, AND STREET SURFACES.

    H. ADJACENT STREETS & APPROVED HAUL ROUTES SHALL BE SWEPT DAILY BY MECHANICAL SWEEPERS EQUIPPED WITH VACUUM UNITS AND THOROUGHLY FLUSHED AFTER SWEEPING IS COMPLETED.

    I. CONSTRUCTION ACTIVITIES SHALL COMPLY WITH CITY OF THE BELMONT NOISE REGULATIONS.

    J. CONSTRUCTION ACCESS ROUTES SHALL BE APPROVED IN ADVANCE BY THE CITY OF BELMONT.

    K. CONSTRUCTION TRAILERS AND STORAGE AREAS FOR CONSTRUCTION MATERIALS SHALL NOT BE LOCATED IMMEDIATELY CONTIGUOUS TO A NEIGHBORING RESIDENCE OR WITHIN THE PUBLIC RIGHT-OF-WAY.

15. PRIOR TO ISSUANCE OF A GRADING PERMIT, THE CONTRACTOR SHALL PREPARE A DUST CONTROL PLAN FOR SUBMITTAL TO THE PUBLIC WORKS DEPARTMENT. THE DUST CONTROL PLAN SHALL INCLUDE A SCHEDULE FOR WATERING AREAS OF EXPOSED SURFACES DURING THE CONSTRUCTION AND GRADING PROCESS (EARLY MORNING AND EARLY EVENING). OVERFILLING OF WATER TRUCKS WILL NOT BE ALLOWED.

16. ALL CONSTRUCTION ACTIVITIES SHALL MEET THE REQUIREMENTS OF THE CITY OF BELMONT NPDES PERMIT.

17. EROSION CONTROL MEASURES SHALL BE INSTALLED AS NECESSARY TO PREVENT SEDIMENT RUNOFF TO PUBLIC ROADWAYS, DRAINAGE FACILITIES AND ADJACENT PROPERTIES.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE SITE OR SURROUNDING AREA DUE TO DUST OR EROSION, RESULTING FROM WORK DONE BY THE CONTRACTOR. CONTRACTOR SHALL PROVIDE A SEVEN (7) DAY PHONE NUMBER TO RECEIVE AND RESPOND TO DUST COMPLAINTS RESULTING FROM ALL CONSTRUCTION OPERATIONS AND SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.

19. PRIOR TO ISSUANCE OF A GRADING PERMIT, CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR REVIEW TO THE PUBLIC WORKS DEPARTMENT.

20. WORK ON RALSTON AVENUE SHALL ONLY CLOSE A LANE BETWEEN 9AM TO 3PM UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

21. WORK ON EL CAMINO AND OVER US 101 SHALL FOLLOW THE CALTRANS PERMIT.

22. NO PARKING SIGNS SHALL BE PLACED 72 HOURS IN ADVANCE OF WORK. THEY SHALL BE SPACED 25 FEET APART.

23. EXISTING UNDERGROUND UTILITIES AND IMPROVEMENTS ARE APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF PREPARATION OF THESE PLANS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH OF ANY EXISTING UNDERGROUND UTILITY AND IMPROVEMENT WITH APPROPRIATE AGENCIES PRIOR TO START OF CONSTRUCTION IN THAT VICINITY. ANY CONFLICTS SHALL BE REPORTED IMMEDIATELY TO THE AGENCY AND TO THE ENGINEER. NEITHER THE CITY NOR THE ENGINEER ASSUMES RESPONSIBILITY THAT THE OBSTRUCTIONS INDICATED ON THE PLANS WILL BE THE OBSTRUCTIONS ENCOUNTERED. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (800) 642-2444 TWO WORKING DAYS PRIOR TO START OF CONSTRUCTION.

24. AT THE TIME OF CONSTRUCTION ALL EXISTING MONUMENTATION, INCLUDING PROJECT SURVEY CONTROL POINTS, SHALL BE PRESERVED. IF MONUMENTS BECOME DAMAGED DURING CONSTRUCTION, THEY SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

25. STATIONING HEREON IS ALONG STREET CENTERLINE UNLESS OTHERWISE SHOWN OR INDICATED.

26. ALL RETURN RADII AND CURB DATA ARE TO FACE OF CURB.

27. ALL LENGTHS ARE BASED ON HORIZONTAL MEASUREMENTS.

28. STATION AND OFFSET PROVIDED TO STORM DRAIN INLETS IS AT CENTER OF STRUCTURE AT FACE OF CURB.

29. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY SOIL OR WATER CONTAMINATION NOTICED DURING CONSTRUCTION TO THE CITY OF BELMONT FIRE DEPARTMENT HAZARDOUS MATERIALS DIVISION, THE SAN MATEO COUNTY DEPARTMENT OF HEALTH, AND THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD.

30. ALL CURB, GUTTER, SIDEWALK & PAVEMENT TO BE REMOVED SHALL BE SAWCUT AT THE CONFORM LIMITS. ALL EXCAVATIONS INTO EXISTING PAVEMENTS SHALL BE SAWCUT.

31. ALL EXCAVATIONS SHALL BE BACKFILLED AND COMPACTED AT DAY'S END. A MINIMUM OF TWO INCHES OF TEMPORARY PAVING SHALL BE INSTALLED AND COMPACTED BY MECHANICAL MEANS TO PRODUCE A SMOOTH SURFACE FOR PEDESTRIAN AND VEHICULAR TRAFFIC.

32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MATCHING STREETS, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING, TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPE, LOW SPOTS OR HAZARDOUS CONDITIONS. PAVING CONFORMS SHALL BE MADE AT A SMOOTHLY TRIMMED BUTT JOINT. DO NOT OVERLAP EXISTING PAVEMENT.

33. IT IS THE PAVING CONTRACTOR'S RESPONSIBILITY TO RESTORE STREET AND SIDEWALK SUBGRADES DISTURBED DURING UNDERGROUND CONSTRUCTION. ALL EXISTING STREET IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER.

34. ALL EXISTING UTILITIES AND IMPROVEMENTS THAT BECOME DAMAGED DURING CONSTRUCTION SHALL BE COMPLETELY RESTORED TO THE SATISFACTION OF THE CITY ENGINEER AND THE UTILITY OWNER, AT THE CONTRACTOR'S SOLE EXPENSE.

35. ALL MANHOLES, VALVE COVER, UTILITY BOXES, AND MONUMENT COVERS SHALL BE ADJUSTED TO FINISHED GRADE AFTER FINAL PAVING.

36. IF ARCHEOLOGICAL MATERIAL ARE UNCOVERED DURING GRADING, TRENCHING OR OTHER EXCAVATIONS, EARTHWORK WITHIN 100 FEET OF THESE MATERIALS SHALL BE STOPPED UNTIL A PROFESSIONAL ARCHAEOLOGIST WHO IS VERIFIED BY THE SOCIETY OF CALIFORNIA ARCHAEOLOGY (SCA) AND/OR THE SOCIETY OF PROFESSIONAL ARCHAEOLOGY (SOPA) HAS HAD AN OPPORTUNITY TO EVALUATE THE SIGNIFICANCE OF THE FIND AND SUGGESTS APPROPRIATE MITIGATION MEASURES, IF THEY ARE DEEMED NECESSARY.

GRADING NOTES

1. PRIOR TO PERFORMING ANY GRADING, THE CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM THE CITY IN ACCORDANCE WITH THE MUNICIPAL CODE.

2. ALL EXCAVATION SPOILS SHALL BE DISPOSED OF IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATION SECTION 7-1.13 DISPOSAL OF MATERIAL OUTSIDE THE RIGHT OF WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL SPOILS.

3. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASPECTS OF EROSION, SEDIMENTATION & POLLUTION CONTROL.

EROSION CONTROL NOTES

1. CONTRACTOR TO EMPLOY BEST MANAGEMENT PRACTICES (BMP'S) IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE OF CALIFORNIA CONSTRUCTION SITE BMP MANUAL AND THE SAN MATEO STORMWATER POLLUTION PREVENTION PROGRAM.

2. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON STARTING OPERATIONS AND NO LESS OFTEN THAN DAILY THEREAFTER. INSPECTOR MAY REQUIRE MORE FREQUENT CLEANING AS WEATHER CONDITIONS DICTATE.

3. EROSION CONTROL MEASURES SHALL BE INSTALLED AS NECESSARY TO PREVENT SEDIMENT RUNOFF TO PUBLIC ROADWAY DRAINAGE FACILITIES, ADJACENT PROPERTIES AND THE SAN FRANCISCO BAY.

4. ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTHEN MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT SEDIMENT-LADEN RUNOFF DOES NOT ENTER THE STORM DRAINAGE SYSTEM.

5. ALL STORM DRAIN STRUCTURES AND INLET PIPES SHALL BE PROTECTED FROM INFLOW OR SILT BY GRAVEL BAG SILT BARRIERS OR SIMILAR DEVICE.

6. CONTRACTOR SHALL HAVE TOOLS, EQUIPMENT, AND MATERIALS TO PROVIDE EROSION CONTROL MEASURES MADE NECESSARY BY A CONSTRUCTION OPERATION, ON THE JOB SITE BEFORE BEGINNING THAT OPERATION.

7. ADJACENT PROPERTIES SHALL BE PROTECTED FROM STORM WATERS, MUD, SILT, ETC. ON A DAILY BASIS.

8. DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND UNTIL FINAL COMPLETION, THE CONTRACTOR WHEN HE OR HIS SUBCONTRACTOR ARE OPERATING EQUIPMENT ON-SITE, SHALL PREVENT THE FORMATION OF ANY AIRBORNE NUISANCE BY WATERING AND/OR TREATING THE SITE OF THE WORK IN SUCH A MANNER THAT WILL CONFINE DUST PARTICLES TO THE IMMEDIATE SURFACE OF THE WORK. ADDITIONAL WATERING SHALL BE PROVIDED ON DRY OR WINDY DAYS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE CAUSED BY DUST FROM HIS OWN ACTIVITIES OR HIS SUBCONTRACTORS ACTIVITIES IN PERFORMING THE WORK UNDER THIS CONTRACT AND SHALL BE RESPONSIBLE FOR ANY CITATIONS, FINES, OR CHARGES RESULTING FROM DUST NUISANCE. DUST CONTROL WILL BE DONE ON A DAILY BASIS.

9. CONCRETE WASH AREA SHALL BE CONSTRUCTED IN ACCORDANCE WITH CALIFORNIA STORM WATER BEST MANAGEMENT PRACTICES DETAIL WM-8.

10. STORE, HANDLE AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES SO AS TO PREVENT THEIR ENTRY TO THE STORM DRAIN SYSTEM. CONTRACTOR MUST NOT ALLOW CONCRETE, WASH WATERS, SLURRIES, PAINT OR OTHER MATERIALS TO ENTER CATCH BASINS OR TO ENTER SITE RUNOFF.

11. USE FILTRATION OR OTHER MEASURES TO REMOVE SEDIMENTS FROM DEWATERING EFFLUENT.

12. NO CLEANING, FUELING, OR MAINTAINING VEHICLES ON SITE SHALL BE PERMITTED TO ALLOW DELETERIOUS MATERIALS FROM ENTERING CATCH BASINS OR TO ENTER SITE RUNOFF.

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REGISTERED PROFESSIONAL ENGINEER — No. 23840 — Exp. 6/30/19 — CIVIL — STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd

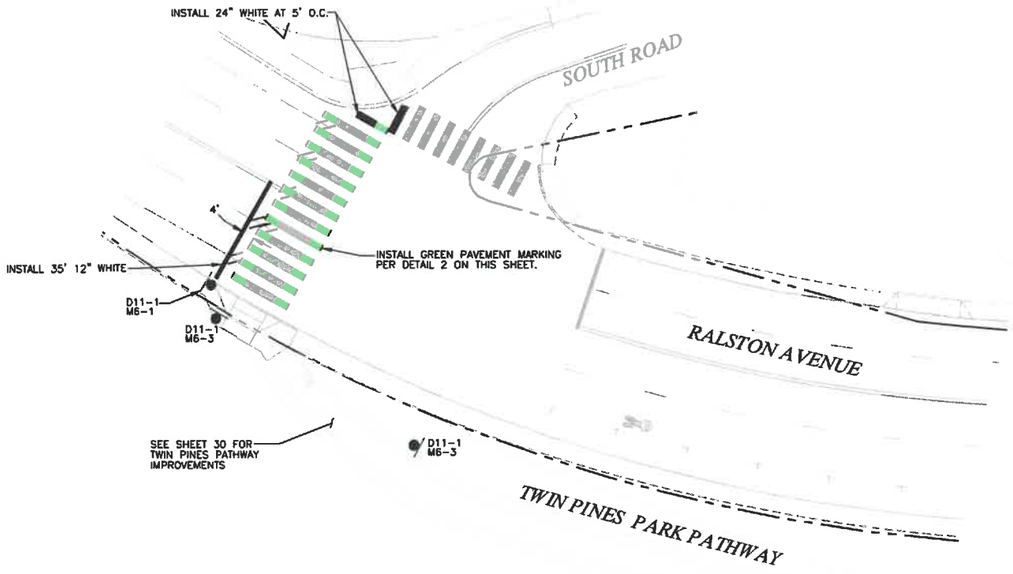
Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

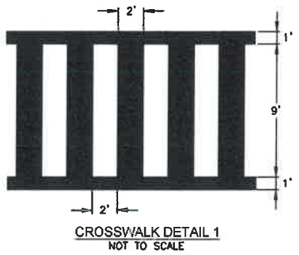
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2
GENERAL NOTES AND LEGEND

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design Bid Submittal v2.dwg





CROSSWALK DETAIL 1
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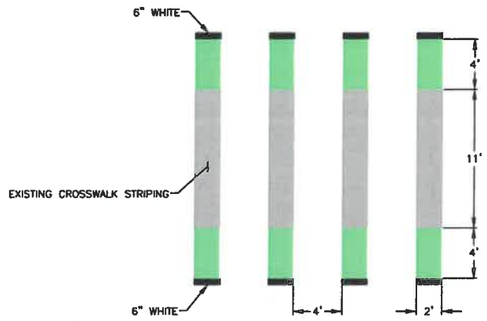

CROSSWALK DETAIL 2
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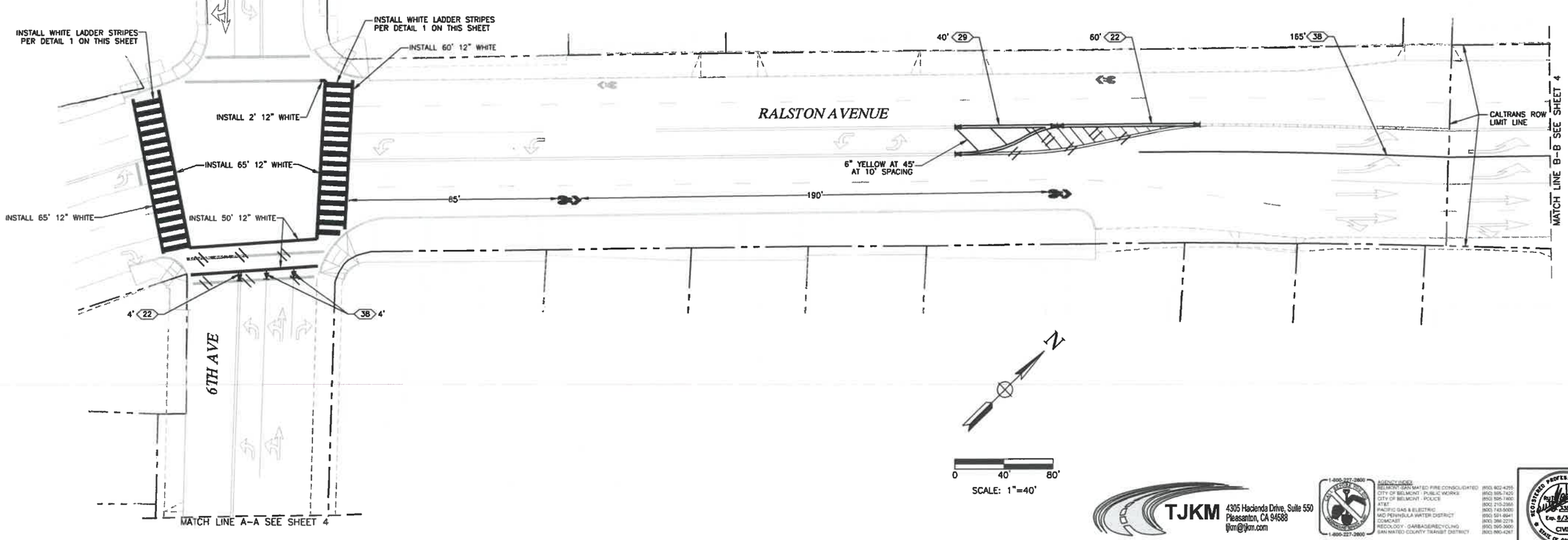

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No.	Revision	Date	By	Chkd
	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

RALSTON AND SOUTH ROAD
RALSTON (6TH AVE TO EL CAMINO REAL)
SIGNING AND STRIPING PLAN

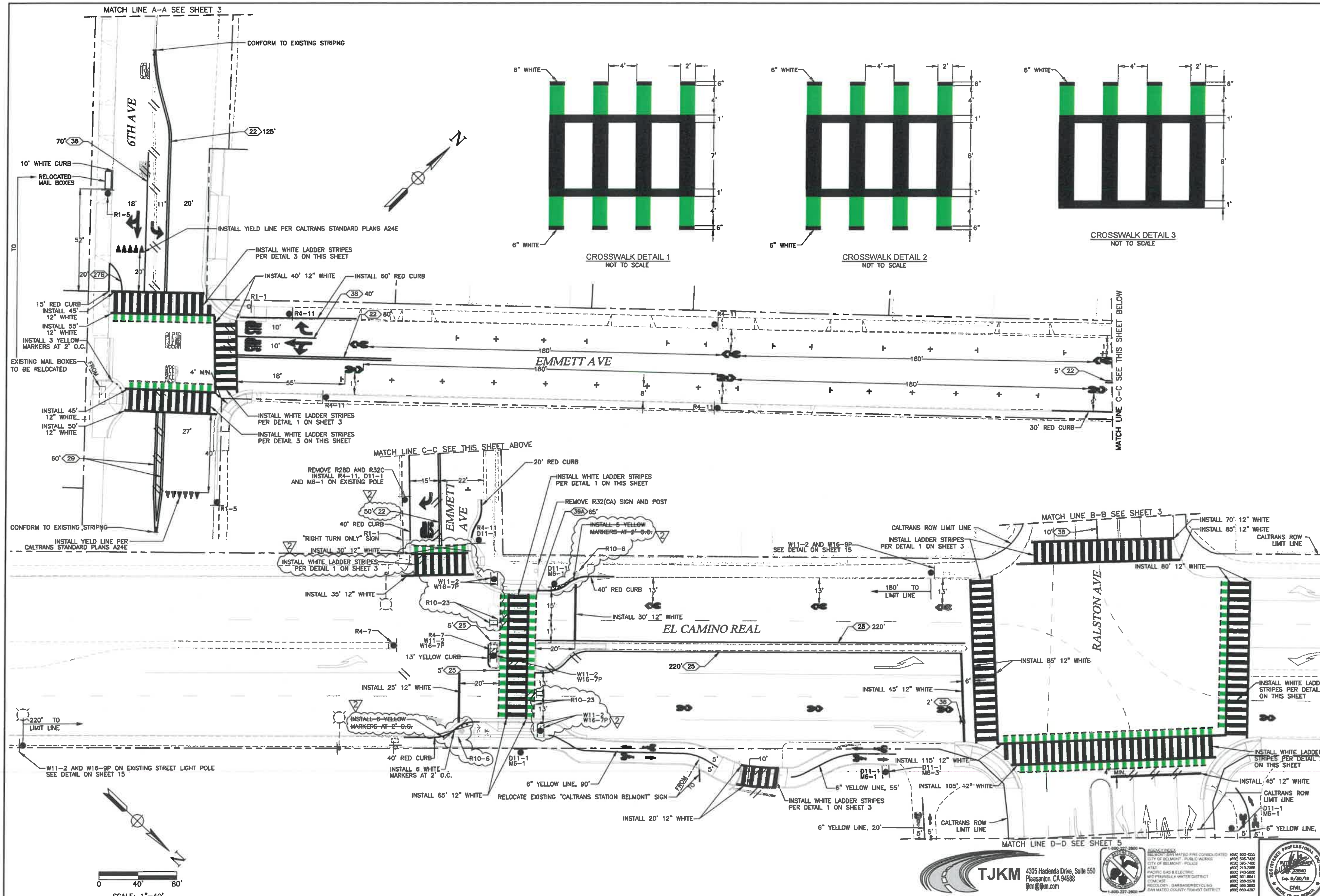
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 3 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design Bid Submittal v2.dwg


MATCH LINE A–A SEE SHEET 3
CONFORM TO EXISTING STRIPNG
6TH AVE
22 125'
70' 38
10' WHITE CURB
RELOCATED MAIL BOXES
TO
R1–5
18'
11'
20'
52'
INSTALL YIELD LINE PER CALTRANS STANDARD PLANS A24E
INSTALL WHITE LADDER STRIPES PER DETAIL 3 ON THIS SHEET
20' 27B
20'
INSTALL 40' 12" WHITE
INSTALL 60' RED CURB
R1–1
38 40'
R4–11
22 80'
15' RED CURB
INSTALL 45' 12" WHITE
INSTALL 55' 12" WHITE
INSTALL 3 YELLOW MARKERS AT 2' O.C.
EXISTING MAIL BOXES TO BE RELOCATED
FROM
CLEAR
KEEP
4' MIN
10'
10'
18'
55'
EMMETT AVE
180'
8'
R4–11
5' 22
30' RED CURB
MATCH LINE C–C SEE THIS SHEET BELOW
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
INSTALL WHITE LADDER STRIPES PER DETAIL 3 ON THIS SHEET
INSTALL 45' 12" WHITE
INSTALL 50' 12" WHITE
27'
40'
60' 29
CONFORM TO EXISTING STRIPNG
INSTALL YIELD LINE PER CALTRANS STANDARD PLANS A24E
6" WHITE
4'
2'
6"
1'
7'
8'
CROSSWALK DETAIL 1
NOT TO SCALE
CROSSWALK DETAIL 2
NOT TO SCALE
CROSSWALK DETAIL 3
NOT TO SCALE
MATCH LINE C–C SEE THIS SHEET ABOVE
20' RED CURB
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON THIS SHEET
REMOVE R28D AND R32C INSTALL R4–11, D11–1 AND M6–1 ON EXISTING POLE
15'
22'
EMMETT AVE
50' 22
40' RED CURB
R1–1 "RIGHT TURN ONLY" SIGN
INSTALL 30' 12" WHITE
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
REMOVE R32(CA) SIGN AND POST
39A 65'
INSTALL 5 YELLOW MARKERS AT 2' O.C.
R4–11
D11–1
R10–6
D11–1
M6–1
W11–2
W16–7P
40' RED CURB
INSTALL 35' 12" WHITE
R10–23
5' 25
R4–7
13' YELLOW CURB
INSTALL 25' 12" WHITE
20'
INSTALL 30' 12" WHITE
EL CAMINO REAL
25 220'
220' 25
13'
15'
W11–2 AND W16–9P SEE DETAIL ON SHEET 15
180' TO LIMIT LINE
220' TO LIMIT LINE
W11–2 AND W16–9P ON EXISTING STREET LIGHT POLE SEE DETAIL ON SHEET 15
INSTALL 6 YELLOW MARKERS AT 2' O.C.
40' RED CURB
INSTALL 6 WHITE MARKERS AT 2' O.C.
INSTALL 65' 12" WHITE
D11–1
M6–1
6" YELLOW LINE, 90'
RELOCATE EXISTING "CALTRANS STATION BELMONT" SIGN
INSTALL 20' 12" WHITE
10'
5'
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
6" YELLOW LINE, 55'
6" YELLOW LINE, 20'
CALTRANS ROW LIMIT LINE
INSTALL LADDER STRIPES PER DETAIL 1 ON SHEET 3
MATCH LINE B–B SEE SHEET 3
10' 38
INSTALL 70' 12" WHITE
INSTALL 85' 12" WHITE
CALTRANS ROW LIMIT LINE
INSTALL 80' 12" WHITE
RALSTON AVE
INSTALL 85' 12" WHITE
6'
INSTALL 45' 12" WHITE
2' 38
INSTALL WHITE LADDER STRIPES PER DETAIL 3 ON THIS SHEET
INSTALL 115' 12" WHITE
D11–1
M6–3
INSTALL 105' 12" WHITE
INSTALL WHITE LADDER STRIPES PER DETAIL 2 ON THIS SHEET
4' MIN.
INSTALL 45' 12" WHITE
CALTRANS ROW LIMIT LINE
D11–1
M6–1
6" YELLOW LINE, 25'
MATCH LINE D–D SEE SHEET 5
0
40'
80'
SCALE: 1"=40'
N

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-NMC-0230 COMMENTS	MAY 15, 2019	AM	AP
2	CALTRANS 0419-NMC-1278 COMMENTS	JUNE 21, 2019	AM	AP

Date: June 27, 2019
Drawn By: AM
Designed By: AP

6TH AVENUE AND EMMETT AVENUE EL CAMINO REAL (EMMETT AVE TO RALSTON AVE) SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

TJKM
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AGENCY INDEX
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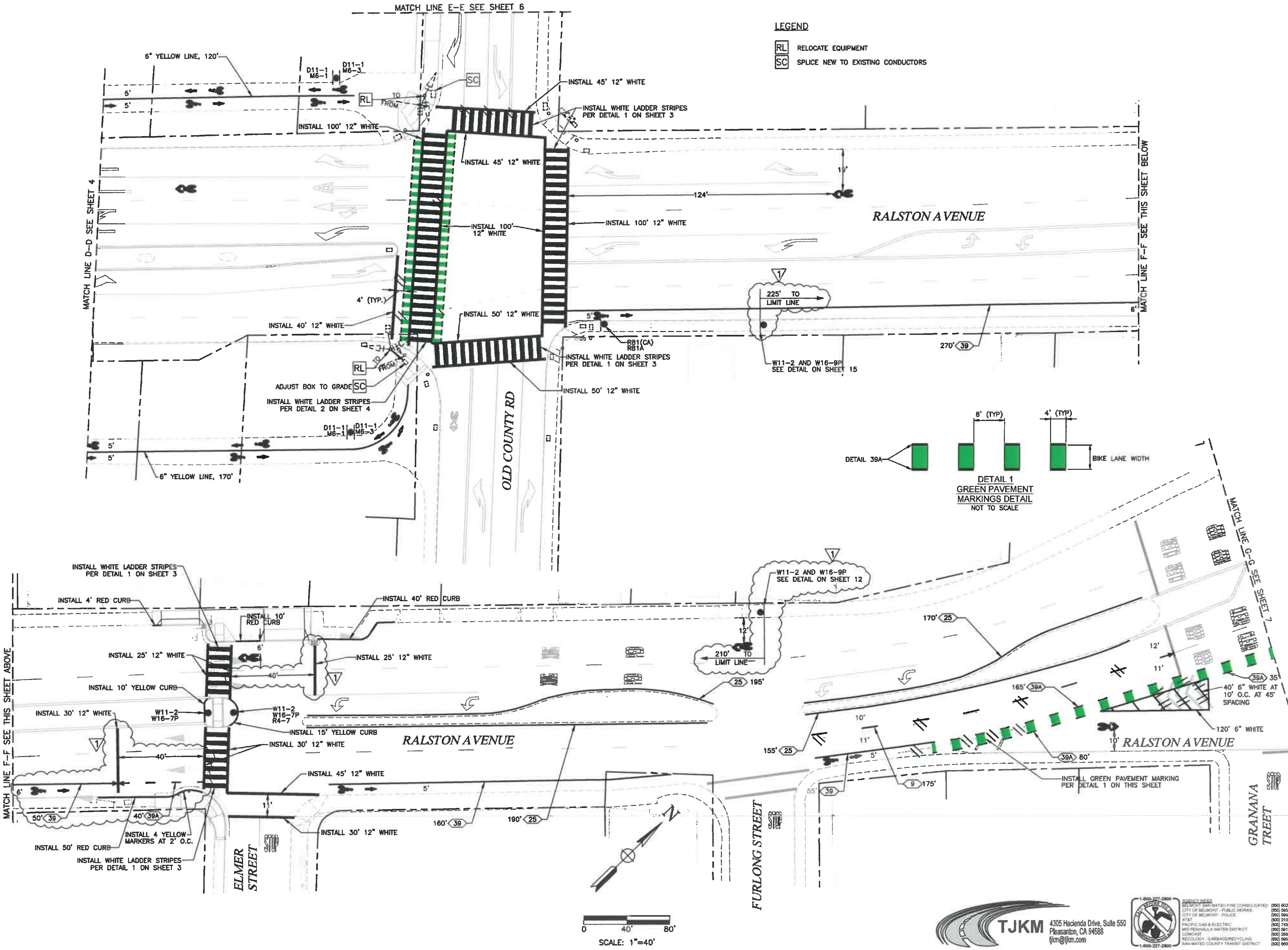
COMCAST (800) 266-2278
RECOLOGY - GARBAGE/RECYCLING (650) 595-3900
SAN MATEO COUNTY TRANSIT DISTRICT (800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
No. 23840
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

SCALE: AS SHOWN

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design Bid Submittal v3.1.dwg


MATCH LINE E-E SEE SHEET 6
LEGEND
RL RELOCATE EQUIPMENT
SC SPLICE NEW TO EXISTING CONDUCTORS
6" YELLOW LINE, 120'
D11-1 M6-1
D11-1 M6-3
5'
5'
RL
TO
FROM
SC
INSTALL 45' 12" WHITE
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
INSTALL 100' 12" WHITE
INSTALL 45' 12" WHITE
19'
124'
INSTALL 100' 12" WHITE
INSTALL 100' 12" WHITE
RALSTON AVENUE
MATCH LINE D-D SEE SHEET 4
MATCH LINE F-F SEE THIS SHEET BELOW
4' (TYP.)
INSTALL 40' 12" WHITE
INSTALL 50' 12" WHITE
225' TO LIMIT LINE
5'
6'
R81(CA)
R81A
270' 39
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
W11-2 AND W16-9P SEE DETAIL ON SHEET 15
ADJUST BOX TO GRADE SC
INSTALL WHITE LADDER STRIPES PER DETAIL 2 ON SHEET 4
INSTALL 50' 12" WHITE
D11-1 M6-1
D11-1 M6-3
OLD COUNTY RD
6" YELLOW LINE, 170'
8' (TYP)
4' (TYP)
DETAIL 39A
BIKE LANE WIDTH
DETAIL 1
GREEN PAVEMENT MARKINGS DETAIL
NOT TO SCALE
MATCH LINE G-G SEE SHEET 7
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
INSTALL 4' RED CURB
INSTALL 10' RED CURB
INSTALL 40' RED CURB
W11-2 AND W16-9P SEE DETAIL ON SHEET 12
6'
12'
INSTALL 25' 12" WHITE
INSTALL 25' 12" WHITE
40'
210' TO LIMIT LINE
170' 25
INSTALL 10' YELLOW CURB
25 195'
12'
11'
165' 39A
39A 35'
40' 6" WHITE AT 10' O.C. AT 45° SPACING
MATCH LINE F-F SEE THIS SHEET ABOVE
INSTALL 30' 12" WHITE
W11-2 W16-7P
W11-2 W16-7P R4-7
INSTALL 15' YELLOW CURB
INSTALL 30' 12" WHITE
RALSTON AVENUE
10'
11'
120' 6" WHITE
RALSTON AVENUE
155' 25
5'
10'
39A 80'
40'
6'
INSTALL 45' 12" WHITE
5'
9 175'
55' 39
INSTALL GREEN PAVEMENT MARKING PER DETAIL 1 ON THIS SHEET
50' 39
40' 39A
INSTALL 4 YELLOW MARKERS AT 2' O.C.
INSTALL 50' RED CURB
INSTALL WHITE LADDER STRIPES PER DETAIL 1 ON SHEET 3
11'
160' 39
190' 25
INSTALL 30' 12" WHITE
ELMER STREET
STOP
N
FURLONG STREET
STOP
GRANANA TREET
STOP
0 40' 80'
SCALE: 1"=40'

No.	Revision	Date	By	Chkd
1	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

RALSTON AVENUE
(OLD COUNTY ROAD TO GRANADA ST)
SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

BELMONT, CALIFORNIA

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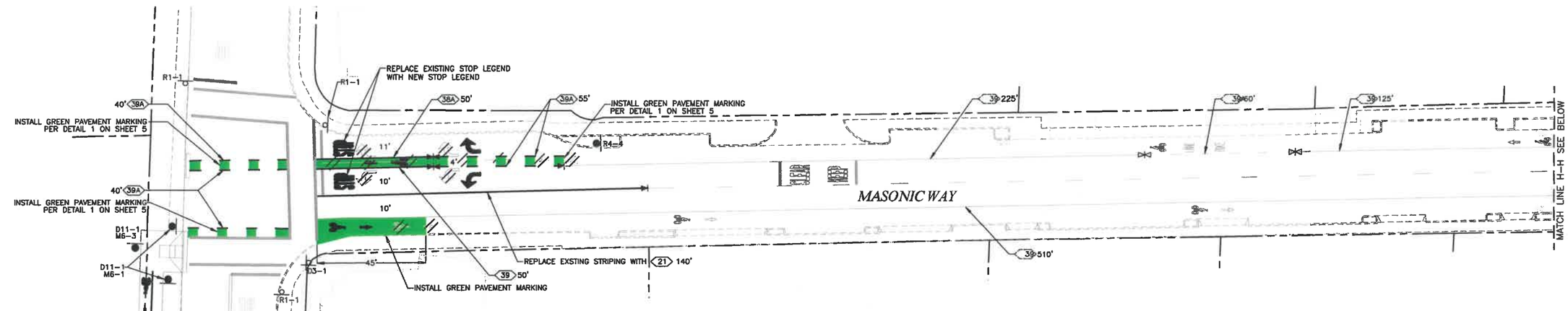
SAN MATEO COUNTY TRANSIT DISTRICT (800) 660-4287

REGISTERED PROFESSIONAL ENGINEER No. 23840 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

SCALE: AS SHOWN

SHEET: 5 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design Bid Submittal v2.dwg



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No.	Revision	Date	By	Chkd

Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

MASONIC WAY
(OLD COUNTY ROAD TO HILLER ST)
SIGNING AND STRIPING
PLAN

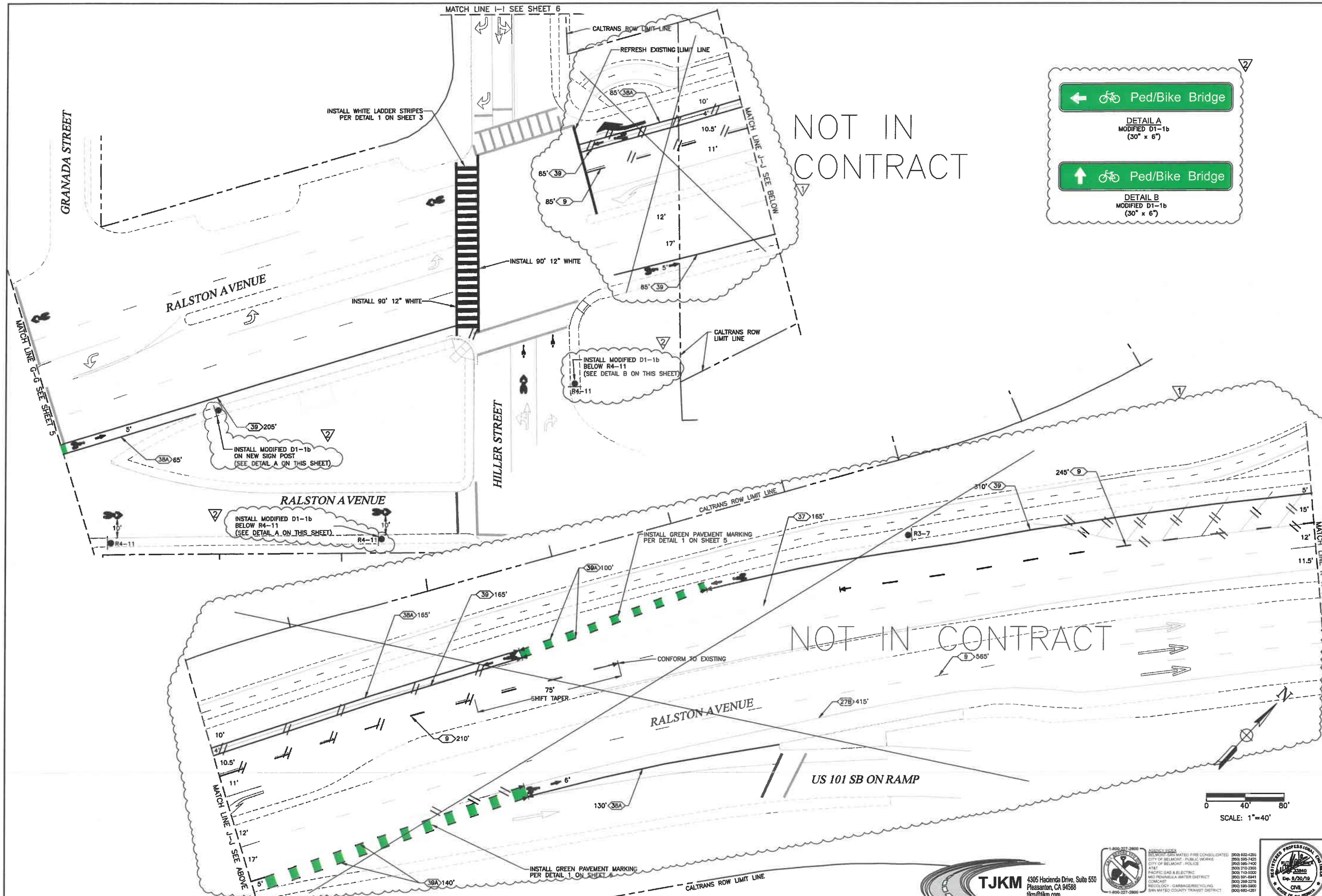
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 6 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design Bid Submittal v2.dwg



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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER C83840 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-NMC-0230 COMMENTS	MAY 15, 2019	AM	AP
2	CALTRANS 0419-NMC-1276 COMMENTS	JUNE 21, 2019	AM	AP

Date: June 27, 2019
Drawn By: AM
Designed By: AP

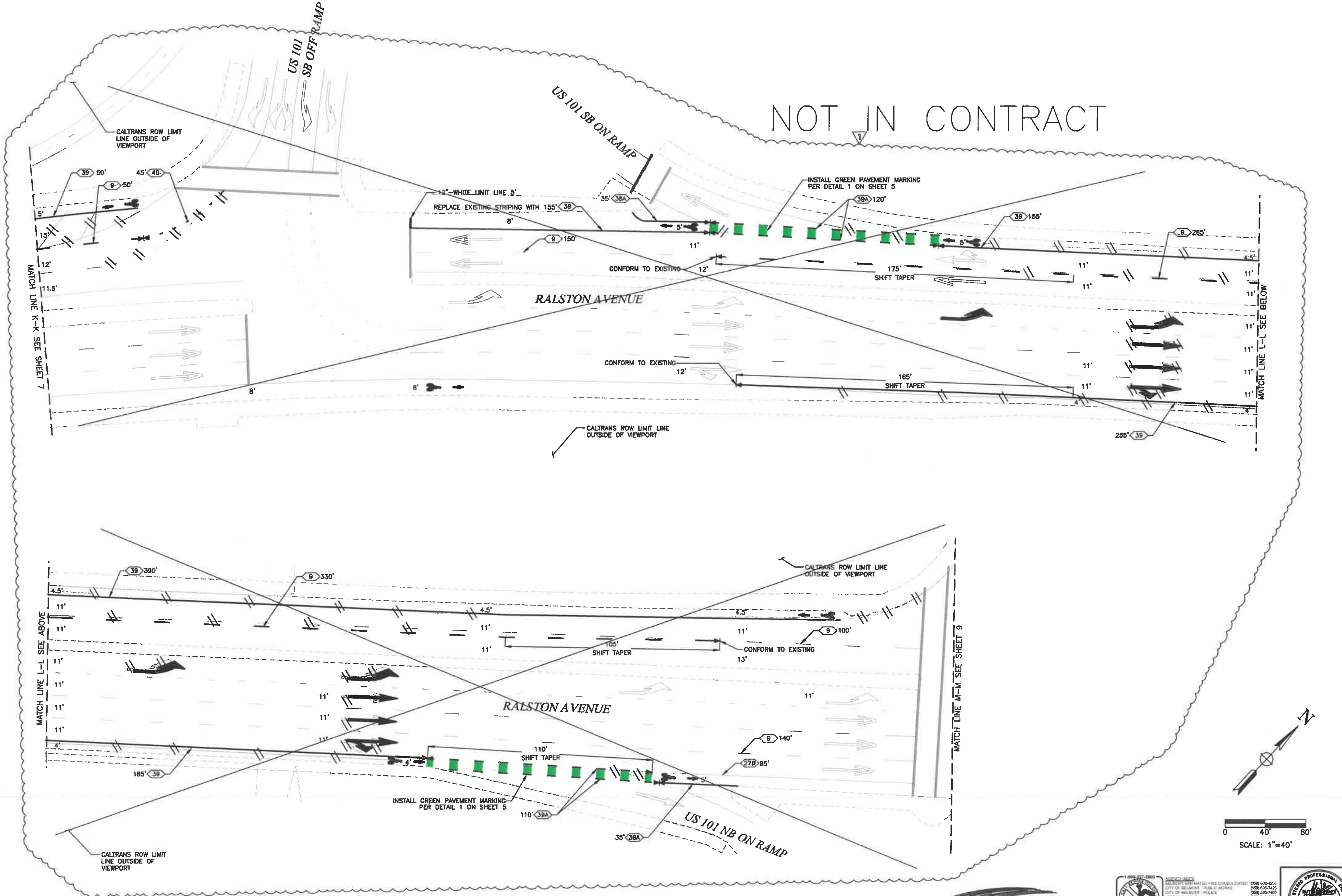
RALSTON AVENUE (GRANADA ST TO US 101 SB OFF RAMP) SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

BELMONT, CALIFORNIA

SCALE: AS SHOWN

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design DSDD v3.1.dwg



No.	Revision	Date	By	Chkd
1	REMOVAL OF SCOPE	MAY 22, 2019	AM	AP

Date: MAY 22, 2019
Drawn By: AM
Designed By: AP

RALSTON AVENUE
(US 101 SB OFF RAMP TO US 101 NB ON RAMP) SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

BELMONT, CALIFORNIA

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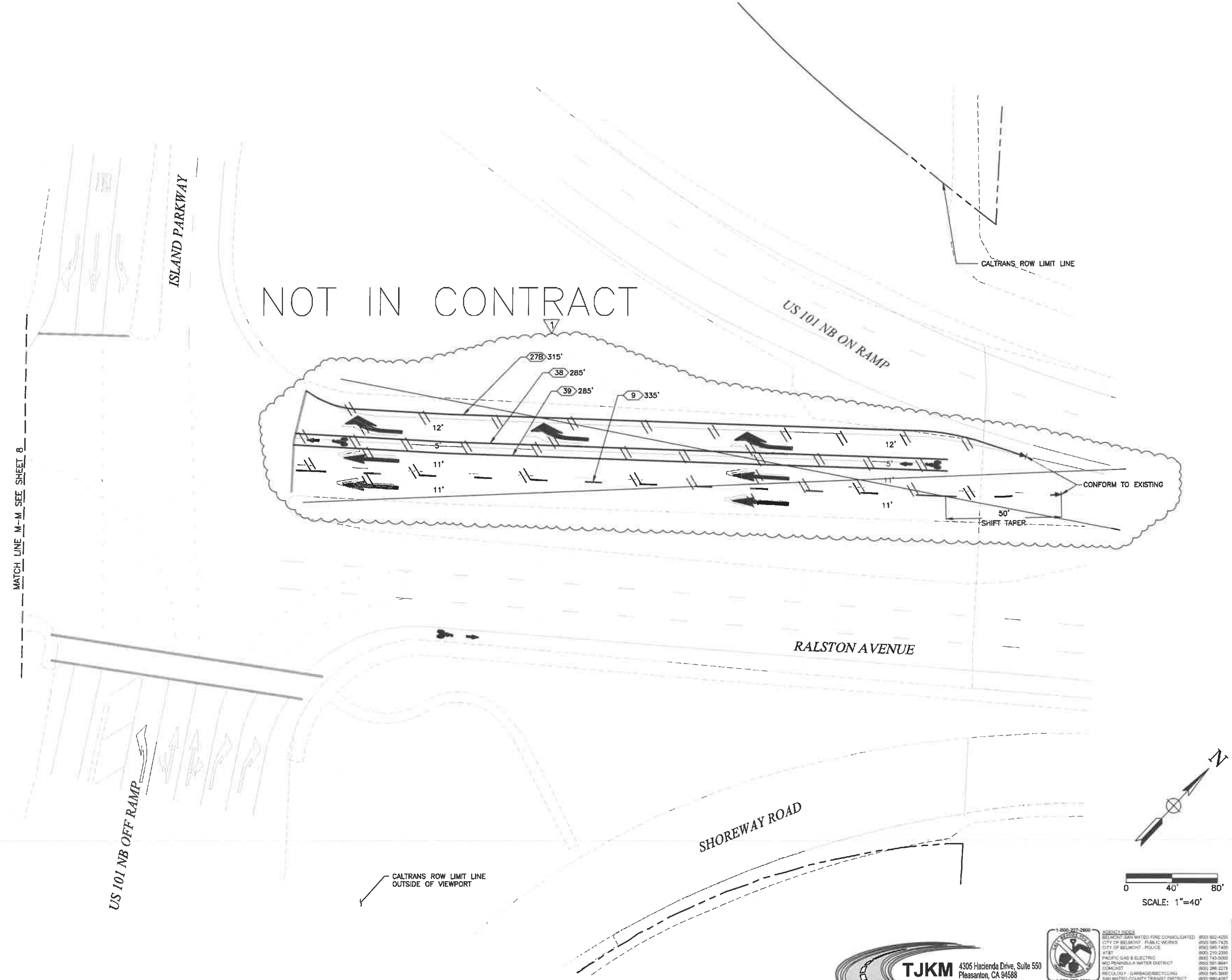
REGISTERED PROFESSIONAL ENGINEER No. 23840 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

SCALE: AS SHOWN

SHEET: 8 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design DSDD v2.1.dwg



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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
33840
Exp. 6/30/19
CIVIL
STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	REMOVAL OF SCOPE	MAY 22, 2019	AM	AP

Date: MAY 22, 2019
Drawn By: AM
Designed By: AP

RALSTON AVENUE
(US 101 NB OFF RAMP TO US 101 NB ON RAMP)
SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 9 OF 43

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston Segment 1 Design DSDD v2.1.dwg

AT REST	AFTER PED ACTIVATION-1		AFTER PED ACTIVATION-2		PED WALK		STOP, THEN CARS PROCEED WHEN SAFE		
ø2 ← / → ø2	ø4P	ø2 ← / → ø2	ø4P	ø2 ← / → ø2	ø4P	ø2 ← / → ø2	ø4P	ø2 ← / → ø2	ø4P
ALL DARK	DON'T WALK	FLASHING YELLOW	DON'T WALK	SOLID YELLOW	DON'T WALK	SOLID RED	WALK	FLASHING RED	FLASHING DON'T WALK

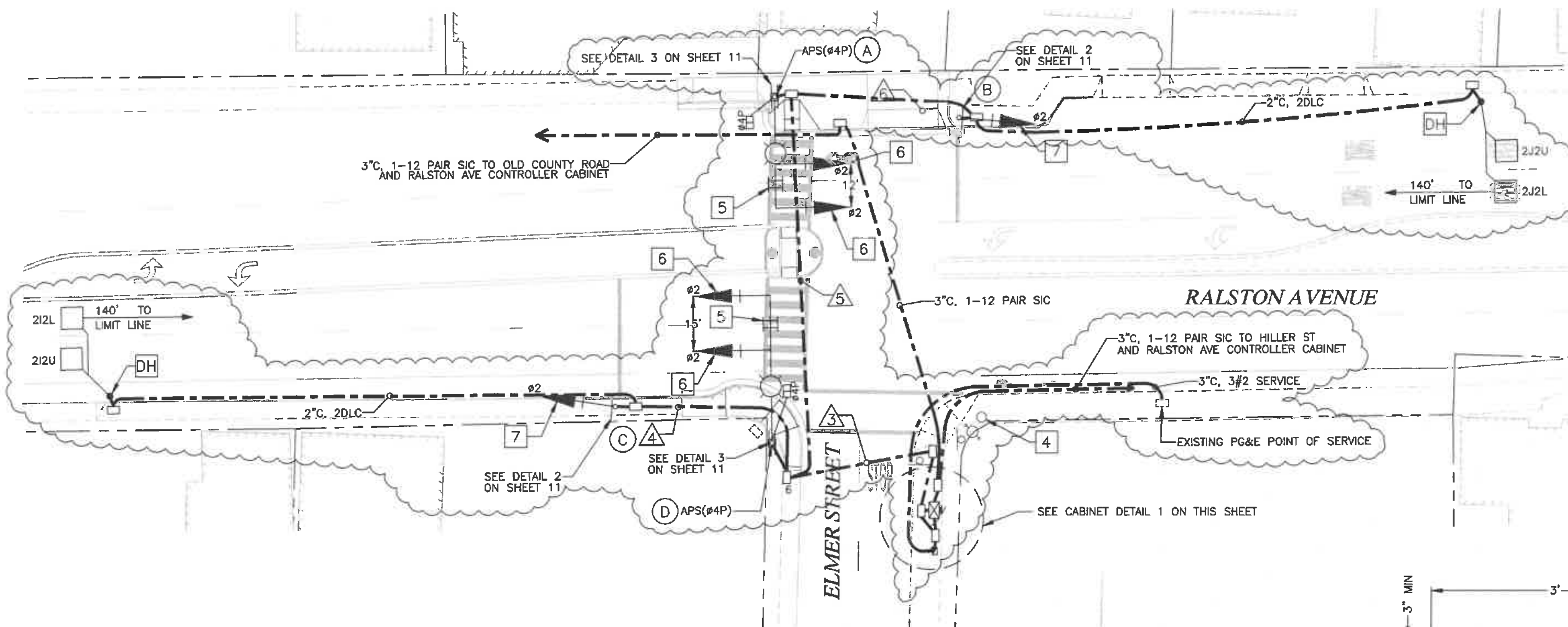
PROPOSED PHASE DIAGRAM

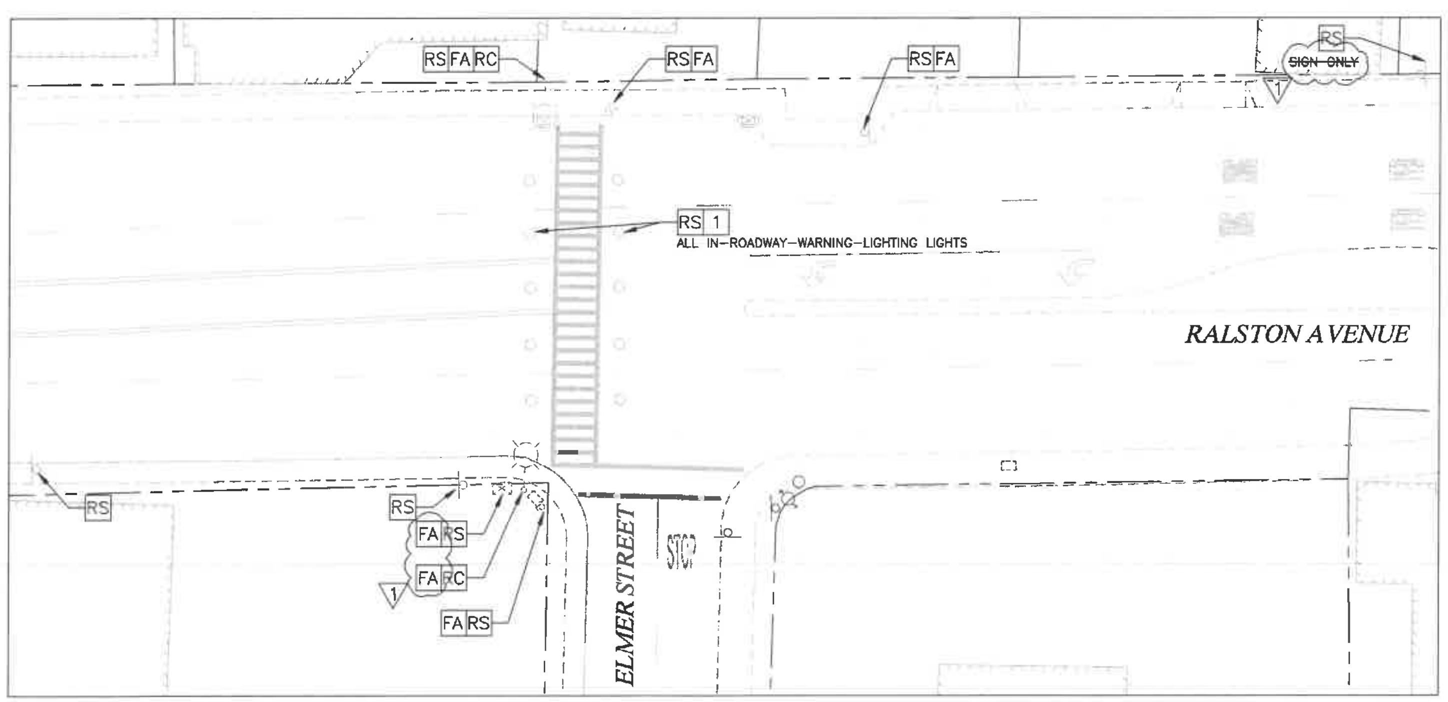
LEGEND

- RS REMOVE AND SALVAGE
- RC REMOVE AND BECOME PROPERTY OF CONTRACTOR
- FA ABANDON FOUNDATION

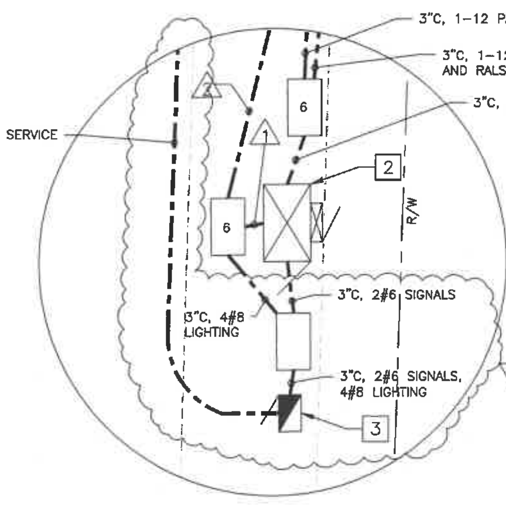
PROJECT NOTES

1. SAWCUT AND REMOVE 1.5"x1'x6" PAVEMENT AT EACH IN-ROADWAY-WARNING-LIGHTING LOCATION. PLACE 6" DEEP LIFT HMA.
2. INSTALL TYPE 332 CABINET FOUNDATION. FURNISH AND INSTALL TYPE 332 CABINET WITH INTELIGHT MODEL 2070E CONTROLLER WITH D-4 SOFTWARE. FURNISH AND INSTALL BATTERY BACK UP SYSTEM IN EXTERNAL CABINET ATTACHED TO SIDE OF 332 CABINET. FRONT DOOR OF 332 CABINET SHALL FACE SOUTH.
3. FURNISH AND INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (120/240V) AND FOUNDATION. SEE WIRING DIAGRAM DETAIL ON SHEET 11.
4. PROTECT EXISTING OVERHEAD POLE WITH SOLAR PANEL IN PLACE.
5. INSTALL MODIFIED R10-23 SIGN ON SMA (BACK TO BACK.) SEE DETAIL 1 ON SHEET 11.
6. FURNISH AND INSTALL PEDESTRIAN HYBRID BEACON SIGNAL HEAD. SEE DETAIL 2 ON THIS SHEET.
7. FURNISH AND INSTALL 2-SECTION SIGNAL HEAD. SEE DETAIL 3 ON THIS SHEET.

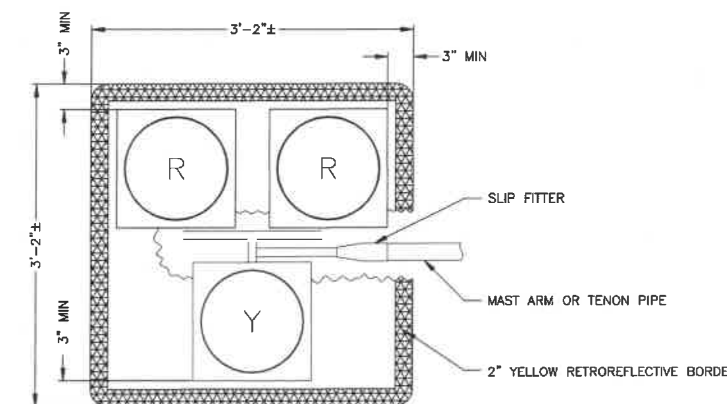




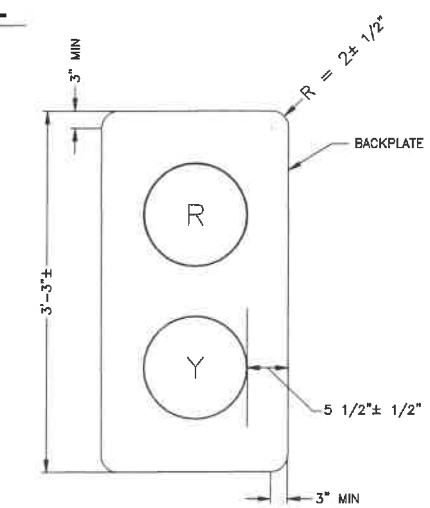
EQUIPMENT REMOVAL PLAN
1" = 20'



1 CABINET DETAIL
1" = 5'



2 PEDESTRIAN HYBRID BEACON (PHB) DETAIL
NOT TO SCALE



3 2-SECTION SIGNAL HEAD DETAIL
NOT TO SCALE

N

SCALE: 1"=20'

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No.	Revision	Date	By	Chkd
1	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

RALSTON AVENUE & ELMER STREET PEDESTRIAN HYBRID INSTALLATION

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

BELMONT, CALIFORNIA

SCALE: AS SHOWN

J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Raston PHBs Design Bid Submittal v2.dwg

CONDUIT AND CONDUCTOR SCHEDULE

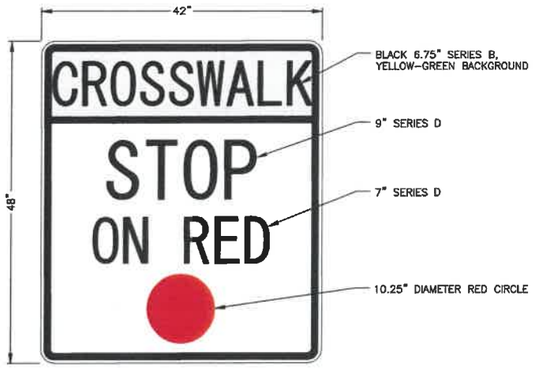
AWG OR CABLE	CONDUIT RUN	NUMBER OF CONDUCTORS — CONDUIT RUN NUMBERS 1	2	3	4	5	6
#14	ø2	6	6	6	3	3	3
	ø4P (1)	2	2	2		2	
	PPB COMMON	1	1	1		1	
	SPARES	6	6	6	3	3	3
	TOTAL #14	15	15	15	6	9	6
#8	LUMINAIRES		2	2		2	
	SIGNAL COMMON	1	1	1	1	1	1
	BOND (BARE)	1	1	1	1	1	1
	TOTAL #8	2	4	4	2	4	2
DLC	ø2	4	4	4	2	2	2
CONDUIT SIZE (in)		2-3"	3"	3"	3"	3"	3"
% CONDUIT FILL		5%	12%	12%	6%	8%	6%

STANDARD NOTES AND ABBREVIATIONS:
(X) = NEW CONDUIT RUN

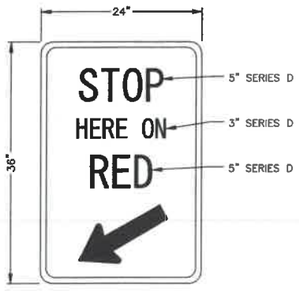
EQUIPMENT SCHEDULE

No.	STANDARD Type	Sig. M.A.	Lum.M.A.	VEH SIG MTG Mast Arm	Pole	PED SIGNAL ø	MTG	APS ø	ARROW	LED LUMINAIRE	SPECIAL REQUIREMENTS
(A)	19-4-100	30'	15'	MAS-3A MAS-3A	– (1)	4	SP-1-T	4 (1)	LEFT	63W	INSTALL MODIFIED R10-23 SIGN (DETAIL 1 ON THIS SHEET) BACK TO BACK LOCATED ON THE MAST ARM. INSTALL W11-2 AND W16-7P ON POLE BACK TO BACK (DETAIL 3 ON THIS SHEET).
(B)	1-B	–	–	–	TV-1-T	–	–	–	–	–	INSTALL R10-6 SIGN ON POLE (DETAIL 2 ON THIS SHEET).
(C)	1-B	–	–	–	TV-1-T	–	–	–	–	–	INSTALL R10-6 SIGN ON POLE (DETAIL 2 ON THIS SHEET).
(D)	26-4-100	40'	15'	MAS-3A MAS-3A	– (1)	4	SP-1-T	4 (1)	RIGHT	63W	INSTALL MODIFIED R10-23 SIGN (DETAIL 1 ON THIS SHEET) BACK TO BACK LOCATED ON THE MAST ARM. INSTALL W11-2 AND W16-7P ON POLE BACK TO BACK (DETAIL 3 ON THIS SHEET).

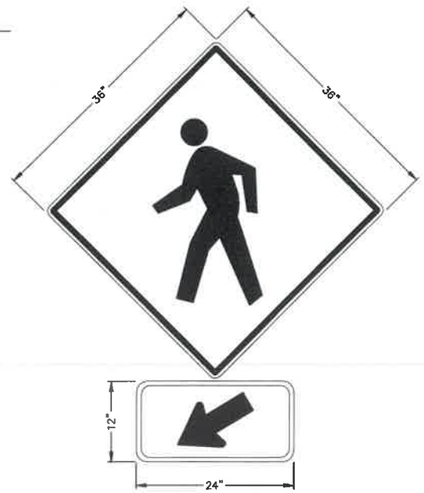
STANDARD NOTES:
OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGENDS, SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS, SIGNAL & LIGHTING STANDARDS SHALL CONFORM TO THE MOST RECENT PROVISIONS OF THE CALTRANS STANDARD PLANS. ALL EQUIPMENT SHOWN IN THE SCHEDULE IS NEW UNLESS NOTED OTHERWISE WITH AN (E).
(X) = NEW SIGNAL POLE



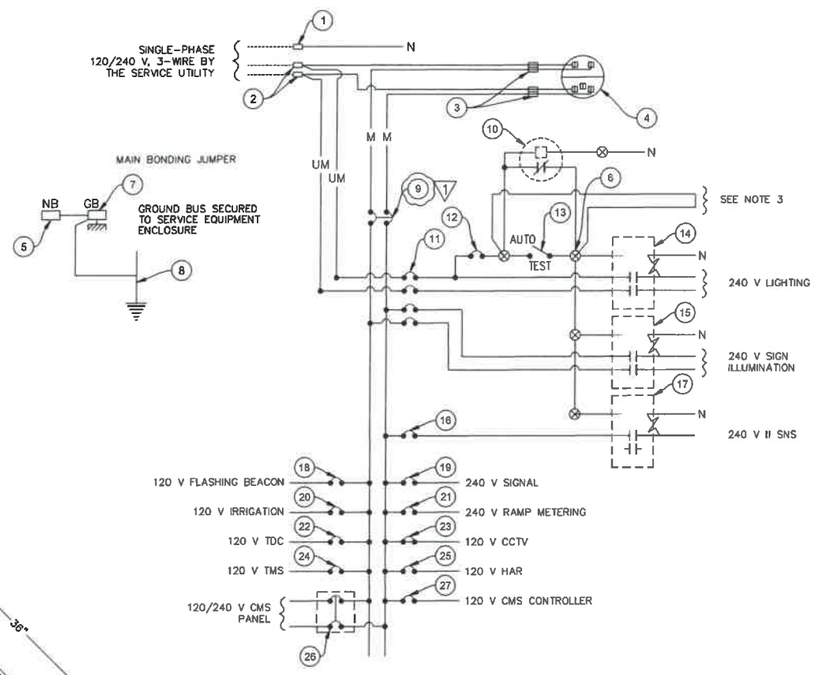
1 **MODIFIED R10-23 SIGN**
NOT TO SCALE



2 **R10-6 SIGN**
NOT TO SCALE



3 **W11-2 AND W16-7P SIGN**
NOT TO SCALE



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

NOTES: (FOR THIS SHEET ONLY)

1. VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
2. UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
3. CONNECT TO REMOTE TEST SWITCH MOUNTED ON LIGHTING STANDARDS, SIGN POST OR STRUCTURE WHEN REQUIRED.
4. ITEMS NO. (1) AND (5) SHALL BE ISOLATED FROM THE SERVICE EQUIPMENT ENCLOSURE.
5. METER SOCKETS SHALL MEET SERVICE UTILITY REQUIREMENTS.
6. THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
7. PHOTOELECTRIC CONTROL SHALL BE TYPE II
8. SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
9. UNLESS OTHERWISE NOTED, THE MAXIMUM NUMBER OF SINGLE-POLE CIRCUIT BREAKER SPACES IN THE ENCLOSURE IS FOURTEEN.
10. SEE STANDARD PLANS ES-2D FOR OTHER DETAILS

TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/240 V)

ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	REMARKS
(1)	NEUTRAL LUG		
(2)	LANDING LUG (NOTE 6)		
(3)	TEST BYPASS FACILITY		
(4)	METER SOCKET AND SUPPORT		
(5)	(NEUTRAL) BUS (1)		
(6)	TERMINAL BLOCK		
(7)	GROUND BUS		
(8)	GROUNDING ELECTRODE		
(9)	100 A, 240 V, 2P, CB	MAIN CIRCUIT BREAKER	
(10)	PHOTOELECTRIC UNIT (SEE NOTE 7)		
(11)	30 A, 240 V, 4P, CB	LIGHTING	
(12)	15 A, 120 V, 1P, CB	LIGHTING	
(13)	15 A, 120 V, 1P, TEST SWITCH	TEST SWITCH	
(14)	60 A, 2P, NO CONTACTOR		NOT USED
(15)	30 A, 2P, NO CONTACTOR		NOT USED
(16)	15 A, 120 V, 1P, CB		NOT USED
(17)	30 A, 2P, NO CONTACTOR		NOT USED
(18)	15 A, 120 V, 1P, CB	FLASHING BEACONS	NOT USED
(19)	50 A, 120 V, 1P, CB	SIGNALS	
(20)	20 A, 120 V, 1P, CB	IRRIGATION	NOT USED
(21)	30 A, 120 V, 1P, CB	RAMP METERING	NOT USED
(22)	20 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET	NOT USED
(23)	30 A, 120 V, 1P, CB	CCTV	NOT USED
(24)	30 A, 120 V, 1P, CB	TMS	NOT USED
(25)	30 A, 120 V, 1P, CB	HAR	NOT USED
(26)	30 A, 120 V, 2P, CB	CMS PANEL	NOT USED
(27)	30 A, 120 V, 1P, CB	CMS CONTROLLER	NOT USED

LEGEND

P	POLE		EXTERNAL CONDUCTOR
CB	CIRCUIT BREAKER		CONDUCTOR OR BUS
A	AMPERE		TIE POINT
V	VOLT		CONDUCTOR COIL
M	METERED		CONTACTOR, CONTACT NO.
UM	UNMETERED	⊗	TERMINAL BLOCK
SN	SOLID NEUTRAL		CONTACTOR, CONTACT NO.
NO	NORMALLY OPEN		ENCLOSURE
NC	NORMALLY CLOSED		GROUND

No.	Revision	Date	By	Chkd
1	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019 | Drawn By: AM / AV | Designed By: AP

RALSTON AVENUE & ELMER STREET PEDESTRIAN HYBRID BEACON CONDUCTOR & EQUIPMENT SCHEDULE

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

BELMONT, CALIFORNIA

TJKM 4305 Hacienda Drive, Suite 550 Pleasanton, CA 94588 tjkm@tjkm.com

SCALE: AS SHOWN

SHEET: 11 OF 43

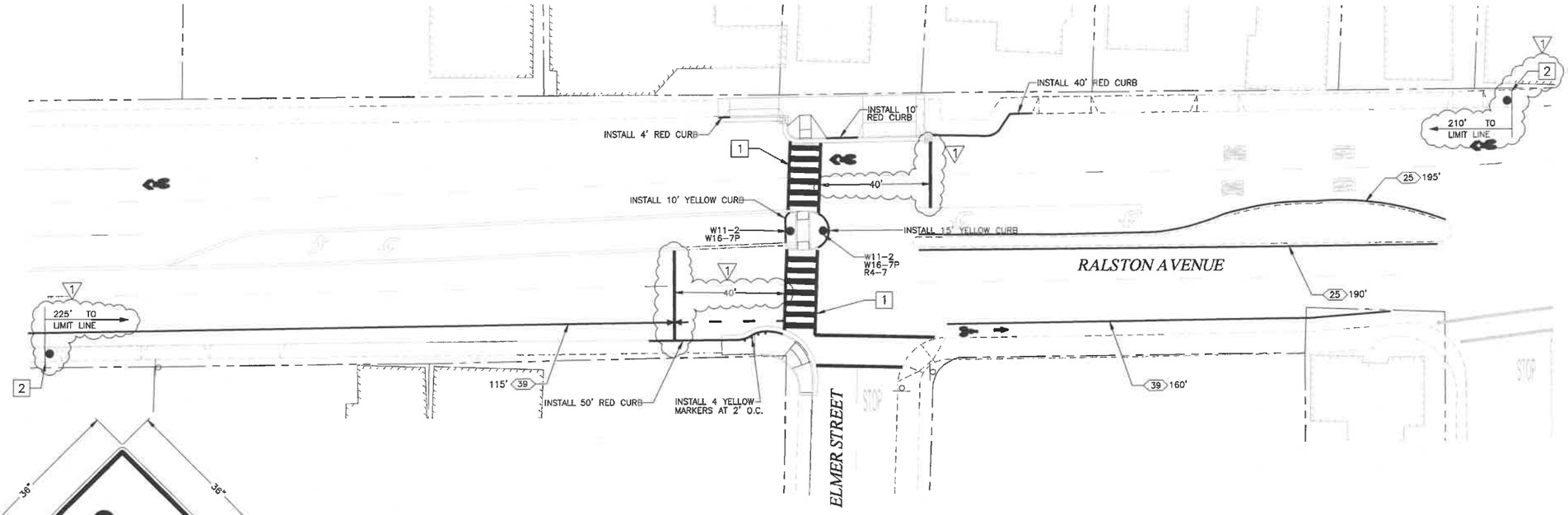
J:\JURISDICTION\B1\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston PHBs Design Bid Submittal v2.dwg

PROJECT NOTES

1. REMOVE EXISTING CROSSWALK STRIPING. INSTALL NEW LADDER CROSSWALK STRIPING. SEE CROSSWALK DETAIL ON SHEET 3.
2. FURNISH AND INSTALL W11-2 AND W16-9P SIGN AND POST. SEE DETAIL 1 ON THIS SHEET.
3. ~~FURNISH AND INSTALL W11-2 AND W16-9P SIGN ON EXISTING POST. SEE DETAIL 1 ON THIS SHEET.~~

LEGEND

- INSTALL NEW SIGN
- EXISTING SIGN TO REMAIN
- INSTALL NEW THERMOPLASTIC STRIPING PER DETAIL NUMBER
- EXISTING STRIPING TO REMAIN
- REMOVE EXISTING STRIPING
- "BIKE LANE SYMBOL" PAVEMENT MARKING LEGEND AND ARROW PER CALTRANS STD PLAN A24C
- "SHARED ROADWAY BICYCLE" PAVEMENT MARKING PER CALTRANS STD PLAN A24C
- CONFORM/END/CHANGE DETAILS
- XX' (XX) (LENGTH OF DETAIL) STRIPING DETAIL
- YELLOW PAVEMENT MARKER



1 W11-2 AND W16-9P SIGN
NOT TO SCALE

GENERAL NOTE: SEE SHEET 10 AND 11 FOR ADDITIONAL SIGNAGE ON SIGNAL EQUIPMENT.

SCALE: 1"=20'

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REGISTERED PROFESSIONAL ENGINEER RUTH CUEVAS No. 23840 Exp. 6/30/19 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019
Drawn By: AM
Designed By: AP

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN
SEGMENTS 1 & 2

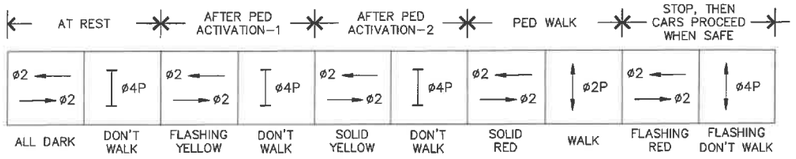
BELMONT, CALIFORNIA

RALSTON AVENUE & ELMER STREET SIGNING AND STRIPING PLAN

SCALE: AS SHOWN

SHEET: 12 OF 43

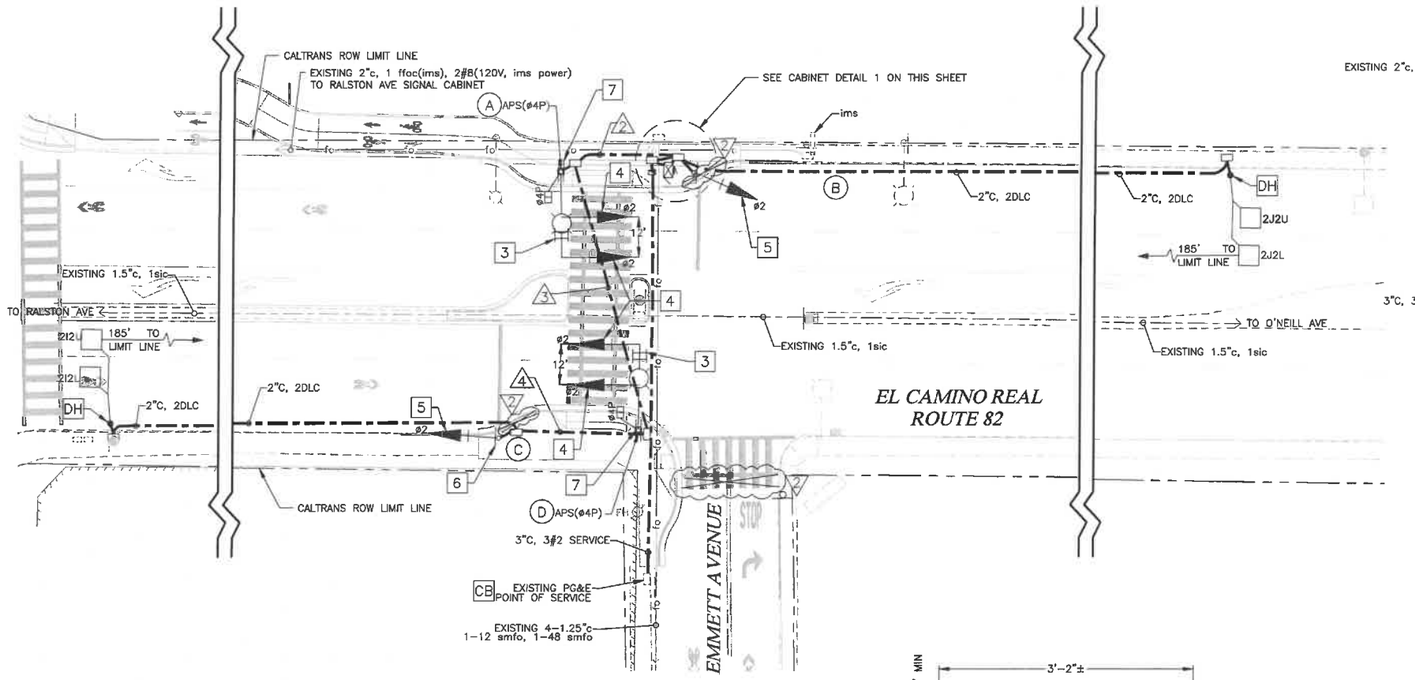
J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Ralston PhIIb Design Bid Submittal v2.dwg

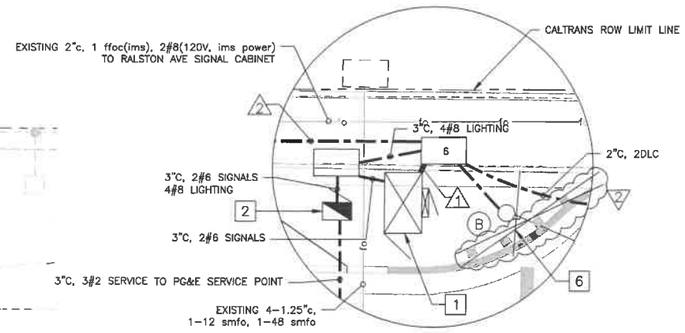


PROPOSED PHASE DIAGRAM

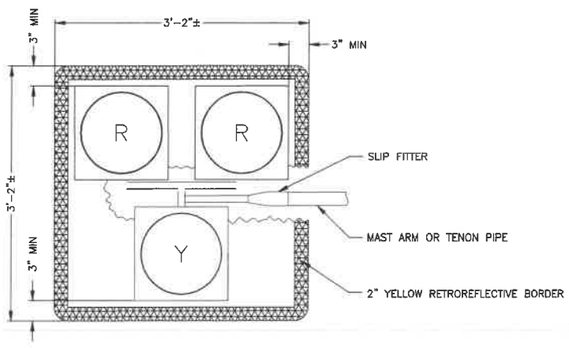
PROJECT NOTES

1. INSTALL TYPE 332 CABINET FOUNDATION. INSTALL STATE FURNISHED MODEL 2070 CONTROLLER AND TYPE 332 CABINET. FURNISH AND INSTALL BATTERY BACK UP SYSTEM IN EXTERNAL CABINET ATTACHED TO SIDE OF 332 CABINET. FURNISH AND INSTALL GPRS MODEM INSIDE TYPE 332 CABINET. FRONT DOOR OF 332 CABINET SHALL FACE SOUTHWEST.
2. FURNISH AND INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (120/240V) AND FOUNDATION. SEE WIRING DIAGRAM DETAIL ON SHEET 14.
3. INSTALL MODIFIED R10-23 SIGN ON SMA BACK TO BACK. SEE DETAIL 1 ON SHEET 14.
4. FURNISH AND INSTALL PEDESTRIAN HYBRID BEACON SIGNAL HEAD. SEE DETAIL 2 ON THIS SHEET.
5. FURNISH AND INSTALL 2-SECTION SIGNAL HEAD. SEE DETAIL 3 ON THIS SHEET.
6. INSTALL R10-6 SIGN ON SIGNAL POLE. SEE DETAIL 2 ON SHEET 14.
7. INSTALL W11-2 AND W16-7P SIGN ON SMA POLE BACK TO BACK. SEE DETAIL 3 ON SHEET 14.

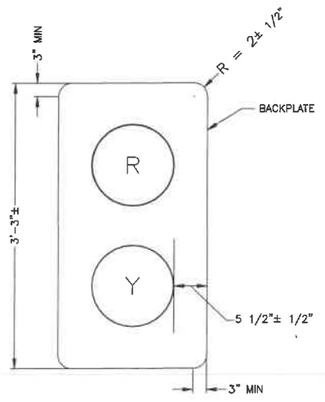




1 CABINET DETAIL
1" = 5'



2 PEDESTRIAN HYBRID BEACON (PHB) DETAIL
NOT TO SCALE



3 2-SECTION SIGNAL HEAD DETAIL
NOT TO SCALE

SCALE: 1"=20'

No.	Revision	Date	By	Chkd
1	CALTRANS 0415-NMC-0230 COMMENTS	MAY 15, 2019	AM	AP
2	CALTRANS 0419-NMC-1276 COMMENTS	JUNE 21, 2019	AM	AP

Date: June 27, 2019
Drawn By: AM
Designed By: AP

EL CAMINO REAL
& EMMETT AVENUE
PEDESTRIAN HYBRID
INSTALLATION

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN
SEGMENTS 1 & 2

BELMONT, CALIFORNIA

SCALE:
AS SHOWN

SHEET:
13 OF 43

TJKM 4305 Hacienda Drive, Suite 550 Pleasanton, CA 94588 tjkm@tjkm.com

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CONDUIT AND CONDUCTOR SCHEDULE

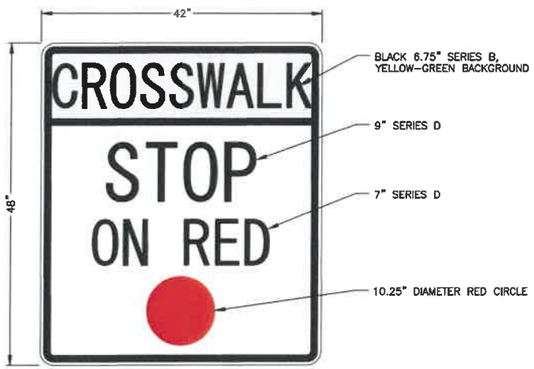
AWG OR CABLE	CONDUIT RUN	NUMBER OF CONDUCTORS — CONDUIT RUN NUMBERS 1	2	3	4
#14	ø2	6	3	3	3
	ø4P (1)	2	2	2	
	PPB COMMON	1	1	1	
	SPARES	6	3	3	
	TOTAL #14	15	9	9	3
#8	LUMINAIRES		2	2	
	SIGNAL COMMON	1	1	1	1
	BOND (BARE)	1	1	1	1
	TOTAL #8	2	4	4	2
DLC	ø2	4	2	2	2 (1)
CONDUIT SIZE (in)		2-3"	3"	3"	3"
% CONDUIT FILL		5%	8%	8%	5%

STANDARD NOTES AND ABBREVIATIONS:
(1) = NEW CONDUIT RUN

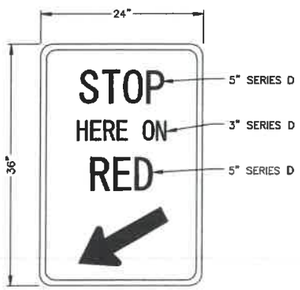
EQUIPMENT SCHEDULE

No.	STANDARD Type	Sig. M.A.	Lum.M.A.	VEH SIG MTG Mast Arm	Pole	PED SIGNAL ø	MTG	APS ø	ARROW	LED LUMINAIRE	SPECIAL REQUIREMENTS
(A)	24-4-100	35'	15'	MAS-3A MAS-3A	– (1)	4	SP-1-T	4 (1)	LEFT	63W	INSTALL MODIFIED R10-23 SIGN (DETAIL 1 ON THIS SHEET) BACK TO BACK LOCATED ON THE MAST ARM. INSTALL W11-2 AND W16-7P ON POLE BACK TO BACK (DETAIL 3 ON THIS SHEET).
(B)	1-B	–	–	–	TV-1-T	–	–	–	–	–	INSTALL R10-6 SIGN ON POLE (DETAIL 2 ON THIS SHEET).
(C)	1-B	–	–	–	TV-1-T	–	–	–	–	–	INSTALL R10-6 SIGN ON POLE (DETAIL 2 ON THIS SHEET).
(D)	19-4-100	25'	15'	MAS-3A MAS-3A	– (1)	4	SP-1-T	4 (1)	LEFT	63W	INSTALL MODIFIED R10-23 SIGN (DETAIL 1 ON THIS SHEET) BACK TO BACK LOCATED ON THE MAST ARM. INSTALL W11-2 AND W16-7P ON POLE BACK TO BACK (DETAIL 3 ON THIS SHEET).

STANDARD NOTES:
OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGENDS, SPECIAL PROVISIONS AND STANDARD SPECIFICATIONS. SIGNAL & LIGHTING STANDARDS SHALL CONFORM TO THE MOST RECENT PROVISIONS OF THE CALTRANS STANDARD PLANS. ALL EQUIPMENT SHOWN IN THE SCHEDULE IS NEW UNLESS NOTED OTHERWISE WITH AN (E).
(X) = NEW SIGNAL POLE

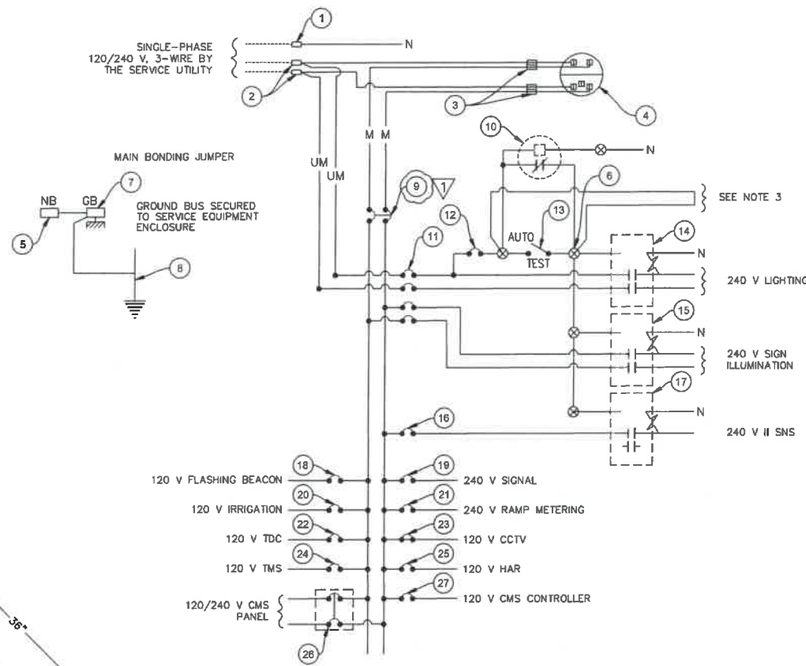


1 **MODIFIED R10-23 SIGN**
NOT TO SCALE



2 **R10-6 SIGN**
NOT TO SCALE

3 **W11-2 AND W16-7P SIGN**
NOT TO SCALE



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

NOTES: (FOR THIS SHEET ONLY)

1. VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
2. UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
3. CONNECT TO REMOTE TEST SWITCH MOUNTED ON LIGHTING STANDARDS, SIGN POST OR STRUCTURE WHEN REQUIRED.
4. ITEMS NO. (1) AND (5) SHALL BE ISOLATED FROM THE SERVICE EQUIPMENT ENCLOSURE.
5. METER SOCKETS SHALL MEET SERVICE UTILITY REQUIREMENTS.
6. THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
7. PHOTOELECTRIC CONTROL SHALL BE TYPE II
8. SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
9. UNLESS OTHERWISE NOTED, THE MAXIMUM NUMBER OF SINGLE-POLE CIRCUIT BREAKER SPACES IN THE ENCLOSURE IS FOURTEEN.
10. SEE STANDARD PLANS ES-2D FOR OTHER DETAILS

TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/240 V)

ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	REMARKS
(1)	NEUTRAL LUG		
(2)	LANDING LUG (NOTE 6)		
(3)	TEST BYPASS FACILITY		
(4)	METER SOCKET AND SUPPORT		
(5)	(NEUTRAL) BUS (1)		
(6)	TERMINAL BLOCK		
(7)	GROUND BUS		
(8)	GROUNDING ELECTRODE		
(9)	100 A, 240 V, 2P, CB	MAIN CIRCUIT BREAKER	
(10)	PHOTOELECTRIC UNIT (SEE NOTE 7)		
(11)	30 A, 240 V, 4P, CB	LIGHTING	
(12)	15 A, 120 V, 1P, CB	LIGHTING	
(13)	15 A, 120 V, 1P, TEST SWITCH	TEST SWITCH	
(14)	60 A, 2P, NO CONTACTOR		NOT USED
(15)	30 A, 2P, NO CONTACTOR		NOT USED
(16)	15 A, 120 V, 1P, CB		NOT USED
(17)	30 A, 2P, NO CONTACTOR		NOT USED
(18)	15 A, 120 V, 1P, CB	FLASHING BEACONS	NOT USED
(19)	50 A, 120 V, 1P, CB	SIGNALS	
(20)	20 A, 120 V, 1P, CB	IRRIGATION	NOT USED
(21)	30 A, 120 V, 1P, CB	RAMP METERING	NOT USED
(22)	20 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET	NOT USED
(23)	30 A, 120 V, 1P, CB	CCTV	NOT USED
(24)	30 A, 120 V, 1P, CB	TMS	NOT USED
(25)	30 A, 120 V, 1P, CB	HAR	NOT USED
(26)	30 A, 120 V, 2P, CB	CMS PANEL	NOT USED
(27)	30 A, 120 V, 1P, CB	CMS CONTROLLER	NOT USED

LEGEND

P	POLE	----	EXTERNAL CONDUCTOR
CB	CIRCUIT BREAKER	——	CONDUCTOR OR BUS
A	AMPERE	—•—	TIE POINT
V	VOLT	—∿—	CONDUCTOR COIL
M	METERED	—||—	CONTACTOR, CONTACT NO.
UM	UNMETERED	⊗	TERMINAL BLOCK
SN	SOLID NEUTRAL	—|/—	CONTACTOR, CONTACT NO.
NO	NORMALLY OPEN		ENCLOSURE
NC	NORMALLY CLOSED		GROUND

No.	Revision	Date	By	Chkd
1	CALTRANS COMMENTS	MAY 15, 2019	AM	AP

Date: MAY 21, 2019 | Drawn By: AM | Designed By: AP

EL CAMINO REAL
& EMMETT AVENUE
PEDESTRIAN HYBRID BEACON
CONDUCTOR & EQUIPMENT SCHEDULE

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN
SEGMENTS 1 & 2

CITY OF BELMONT, CALIFORNIA

TJKM 4305 Hacienda Drive, Suite 550 Pleasanton, CA 94588 tjkm@tjkm.com

AGENCY INDEX
BELMONT-SAN MATEO FIRE CONSOLIDATED (650) 802-4356
CITY OF BELMONT - PUBLIC WORKS (650) 595-7425
CITY OF BELMONT - POLICE (650) 595-7430
AT&T (800) 310-2355
PACIFIC GAS & ELECTRIC (800) 743-5000
MID PENINSULA WATER DISTRICT (650) 561-8941
COMCAST (800) 266-2278
RECOLOGY - GARBAGE/RECYCLING (650) 595-3900
SAN MATEO COUNTY TRANSIT DISTRICT (800) 660-4287

REGISTERED PROFESSIONAL ENGINEER — PUTU SUARDIKA — No. 23840 — Exp. 6/30/19 — CIVIL — STATE OF CALIFORNIA

SCALE: AS SHOWN
SHEET: 14 OF 43

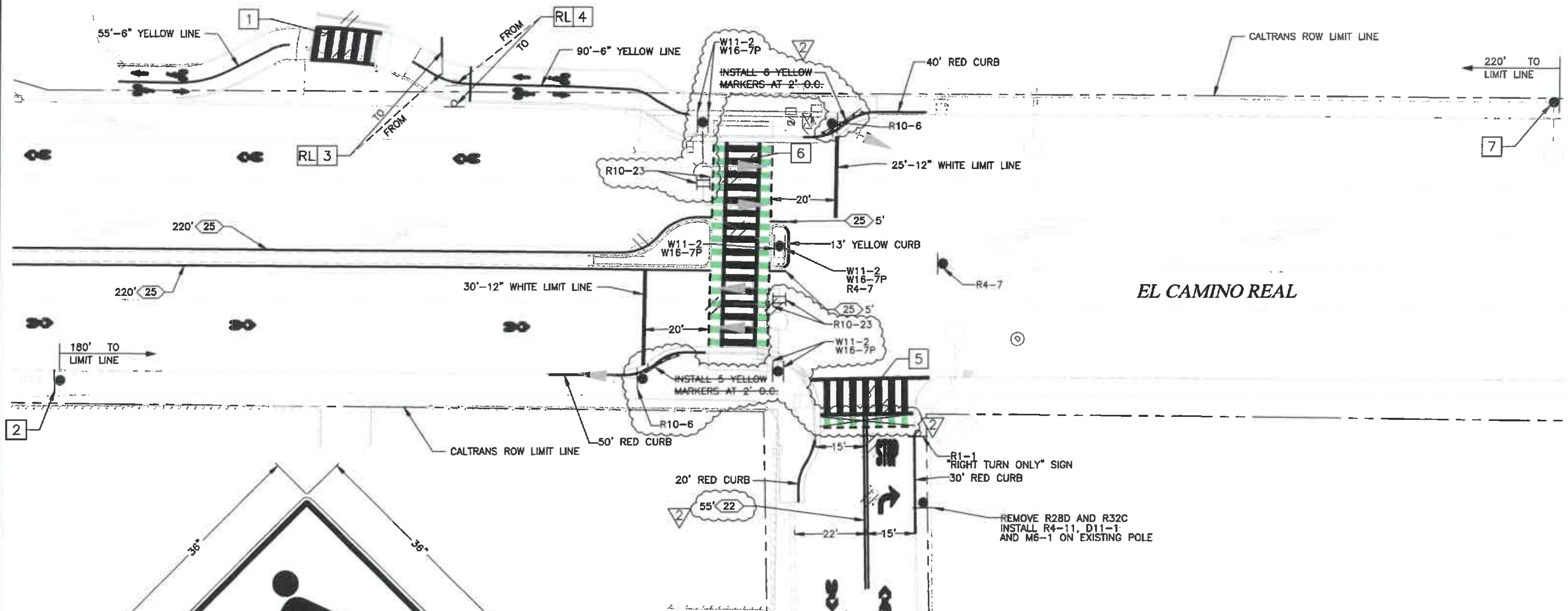
J:\JURISDICTION\EL Belmont\2018-019 Ralston Segment 1 Design\CAD\Bid Submittal\2018-019 Ralston PHBs Design Bid Submittal v2.dwg

PROJECT NOTES

1	INSTALL LADDER CROSSWALK PAVEMENT MARKINGS PER DETAIL 1 ON SHEET 3.
2	FURNISH AND INSTALL W11-2 AND W16-9P SIGN AND POST. SEE DETAIL 1 ON THIS SHEET.
3	RELOCATE EXISTING "CALTRAIN STATION BELMONT" SIGN AND POST TO LOCATION SHOWN.
4	RELOCATE EXISTING R28A MODIFIED SIGN AND POST TO LOCATION SHOWN.
5	INSTALL LADDER CROSSWALK PAVEMENT MARKINGS PER DETAIL 1 ON SHEET 3. (2)
6	INSTALL LADDER CROSSWALK PAVEMENT MARKINGS PER DETAIL 1 ON SHEET 4.
7	FURNISH AND INSTALL W11-2 AND W16-9P SIGN ON EXISTING STREET LIGHT POLE. SEE DETAIL 1 ON THIS SHEET.

LEGEND

- INSTALL NEW SIGN
- EXISTING SIGN TO REMAIN
- INSTALL NEW THERMOPLASTIC STRIPING PER DETAIL NUMBER
- EXISTING STRIPING TO REMAIN
- REMOVE EXISTING STRIPING
- TYPE IV (R) ARROW PAVEMENT MARKING PER CALTRANS STD PLAN A24A
- "STOP" PAVEMENT MARKING PER CALTRANS STD PLAN A24D
- "BIKE LANE SYMBOL" PAVEMENT MARKING LEGEND AND ARROW PER CALTRANS STD PLAN A24C
- PEDESTRIAN SYMBOL PAVEMENT MARKING
- "SHARED ROADWAY BICYCLE" PAVEMENT MARKING PER CALTRANS STD PLAN A24C
- XX' (XX) (LENGTH OF DETAIL) STRIPING DETAIL
- ~~PAVEMENT MARKER~~ (2)
- EXISTING STREET LIGHT POLE



1 **W11-2 AND W16-9P SIGN**
NOT TO SCALE

GENERAL NOTE: SEE SHEET 10 AND 11 FOR ADDITIONAL SIGNAGE ON SIGNAL EQUIPMENT.

N

0 20' 40'
SCALE: 1"=20'

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AGENCY INDEX

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1-800-227-2600

REGISTERED PROFESSIONAL ENGINEER · C73840 · Exp. 6/30/19 · CIVIL · STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-NMC-0230 COMMENTS	MAY 15, 2019	AM	AP
2	CALTRANS 0419-NMC-1276 COMMENTS	JUNE 21, 2019	AM	AP

Date: June 27, 2019
Drawn By: AM
Designed By: AP

EL CAMINO REAL & EMMETT AVENUE SIGNING AND STRIPING PLAN

DEPARTMENT OF PUBLIC WORKS
RALSTON CORRIDOR IMPROVEMENT PLAN SEGMENTS 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

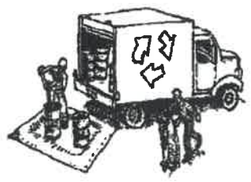
J:\JURISDICTION\B\Belmont\018-019 Ralston Segment 1 Design\ACAD\Bid Submittal\018-019 Raston PHBs Design Bid Submittal v3.1.dwg

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ❑ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ❑ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control

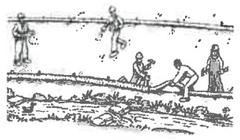
Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving

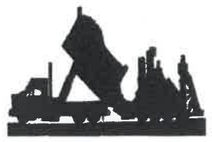


- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

Paving/Asphalt Work



- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.

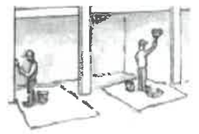
Concrete, Grout & Mortar Application

- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping

- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

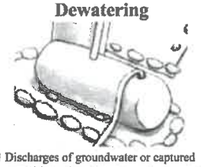
Painting & Paint Removal



Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to $10,000 per day!

WILSEY HAM
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3130 La Selva Street, Suite 100
San Mateo, CA 94403
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AGENCY/UTILITY	
SAN MATEO-FOSTER CONSOLIDATION	(650) 522-7000
CITY OF BELMONT - PUBLIC WORKS	(650) 595-7420
CITY OF BELMONT - POLICE	(650) 595-7400
AT&T	(800) 310-2556
PACIFIC GAS & ELECTRIC	(800) 743-5000
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

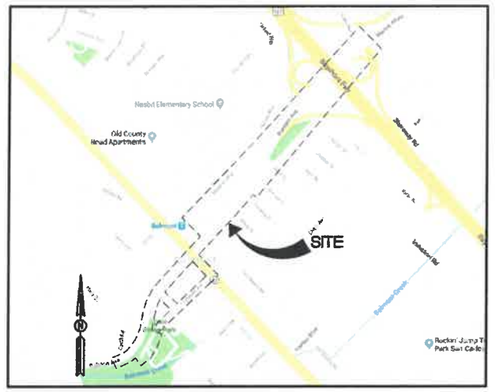
CONSTRUCTION BEST MANAGEMENT PRACTICES

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 16 OF 43



LOCATION MAP
NOT TO SCALE

BENCHMARK/DATUM

SEE CIVIL IMPROVEMENTS PLAN SHEETS FOR TEMPORARY CONTROL POINT LOCATIONS.

RECORD DRAWINGS

CONTRACTOR SHALL KEEP ACCURATE RECORD DRAWINGS WHICH SHOW THE FINAL LOCATION, ELEVATION, AND DESCRIPTION OF ALL WORK. CONTRACTOR SHALL ALSO NOTE THE LOCATION AND ELEVATION OF ANY EXISTING IMPROVEMENTS ENCOUNTERED. RECORDS SHALL BE "REDLINED" ON A SET OF CONSTRUCTION PLAN DRAWINGS AND GIVEN TO THE OWNER UPON COMPLETION OF WORK.

UNAUTHORIZED CHANGES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY WILSEY HAM.

REVISIONS

ALL REVISIONS TO THESE PLANS MUST BE REVIEWED AND APPROVED IN WRITING BY WILSEY HAM AND THE CITY ENGINEER PRIOR TO CONSTRUCTION OF AFFECTED ITEMS. IN ADDITION, REVISIONS AFFECTING THE WATER SYSTEM ALSO REQUIRE WRITTEN APPROVAL FROM MID-PENINSULA WATER DISTRICT PRIOR TO CONSTRUCTION OF THE AFFECTED ITEMS.

ACCURACY

AS TO THE ACCURACY BETWEEN THE WORK SET FORTH ON THESE PLANS AND THE WORK IN THE FIELD, ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WILSEY HAM PRIOR TO START OF CONSTRUCTION OF THE PARTICULAR ITEM OF WORK.

ACCURACY OF UTILITIES

EXISTING UTILITY INFORMATION WAS PROVIDED TO WILSEY HAM AND MAY NOT HAVE BEEN VERIFIED IN THE FIELD. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND REPORT ANY CONFLICTS TO THE ENGINEER BEFORE CONSTRUCTION BEGINS.

LEGEND

EXISTING	PROPOSED		EXISTING	PROPOSED	
		CENTERLINE			CATCH BASIN
		PARCEL LINE/RIGHT OF WAY	D		STORM DRAIN MANHOLE
		BUILDING LINE			SIGN
		CONCRETE MEDIAN WITH COBBLESTONE			ELECTROLIER
		DOWNTOWN DISTRICT SIDEWALK			GAS VALVE
		CURB AND GUTTER			FIRE HYDRANT
		DRIVEWAY	U		UTILITY BOX
		LIMIT OF SLURRY SEAL			WATER METER
		FENCE			WATER VALVE
		CONTOUR			SLURRY SEAL LIMITS
		VALLEY GUTTER			DIGOUT REPAIR
		SANITARY SEWER			SLOPE DIRECTION
		STORM DRAIN			TREE
		WATER			TREE TO BE REMOVED
		ELECTRIC LINE			STUMP TO BE REMOVED
		GAS			RETAINING WALL
		MONUMENT			TREE WELL
		GROUND SLOPE			
S		SANITARY SEWER MANHOLE			

ABBREVIATIONS

AB	AGGREGATE BASE	MH	MANHOLE
AC	ASPHALT CONCRETE	MON	MONUMENT
BM	BENCHMARK	(N)	NEW
BR	BOTTOM OF RAMP	N	NORTH
BW	BACK OF WALK	NTS	NOT TO SCALE
C&G	CURB AND GUTTER	PROP	PROPOSED
CB	CATCH BASIN	PCC	PORTLAND CEMENT CONCRETE
CL	CENTERLINE	PL	PROPERTY LINE
CLR	CLEAR	R	RADIUS
COM	COMMERCIAL	R/W	RIGHT OF WAY
CP	CONTROL POINT	RT	RIGHT
DET	DETAIL	S	SOUTH, SLOPE
DG	DECOMPOSED GRANITE	SD	STORM DRAIN
DWY	DRIVEWAY	SDCB	STORM DRAIN CATCH BASIN
E	EAST	SDMH	STORM DRAIN MANHOLE
ELEC	ELECTRICAL	SL	STREET LIGHT
EG	EXISTING GROUND	SS	SANITARY SEWER
EL, ELEV	ELEVATION	SSMH	SANITARY SEWER MANHOLE
EP	EDGE OF PAVEMENT	STA	STATION
ES	EDGE OF SHOULDER	STD	STANDARD
(E), EX	EXISTING	SW	SIDEWALK
FC	FACE OF CURB	TBR	TO BE RELOCATED
FG	FINISH GRADE	TC	TOP OF CURB
FH	FIRE HYDRANT	TG	TOP OF GRATE
FL	FLOW LINE	TR	TOP OF RAMP
FP	FINISHED PAVEMENT	TRC	TOP OF ROLLED CURB
FT	FOOT OR FEET	TYP	TYPICAL
G	GAS	VG	VALLEY GUTTER
GB	GRADE BREAK	W	WATER, WEST
HMA	HOT MIX ASPHALT	WM	WATER METER
HP	HIGH POINT	WV	WATER VALVE
INV	INVERT ELEVATION		
L	LENGTH		
LF	LINEAR FOOT/FEET		
LT	LEFT		
LP	LOW POINT		

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

LEGEND & ABBREVIATIONS

CITY OF BELMONT
BELMONT, CALIFORNIA

WILSEY HAM
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3130 La Selva Street, Suite 100
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650.349.2151
wilseyham.com

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AGENCY INDEX	
SAN MATEO FIRE CONSOLIDATION	(650) 522-7900
CITY OF BELMONT - PUBLIC WORKS	(650) 595-7435
CITY OF BELMONT - POLICE	(650) 595-7400
AT&T	(800) 310-2355
PACIFIC GAS & ELECTRIC	(800) 743-5000
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3800
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA

SCALE: AS SHOWN

SHEET: 17 OF 43

File: H:\1609-T,KM\1609-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\17 LEGEND & ABBREVIATIONS.dwg Plotted: 4-22-19 @ 08:12:29 AM By: amandalka

KEY MAP
NOT TO SCALE

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

KEY MAP

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT
1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE:
AS SHOWN

SHEET:
18 OF 43

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AGENCY INDEX	
SAN MATEO FIRE CONSOLIDATION	(650) 622-7000
CITY OF BELMONT - PUBLIC WORKS	(650) 595-7428
CITY OF BELMONT - POLICE	(650) 595-7400
AT&T	(800) 310-2355
PACIFIC GAS & ELECTRIC	(800) 743-6000
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
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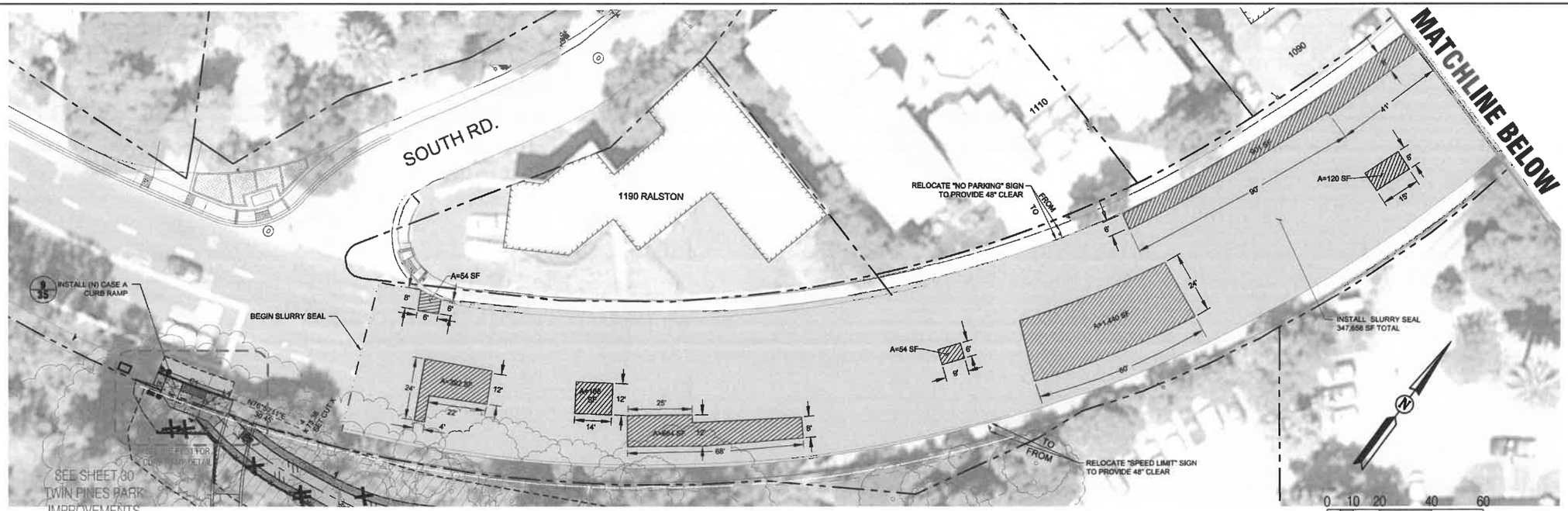
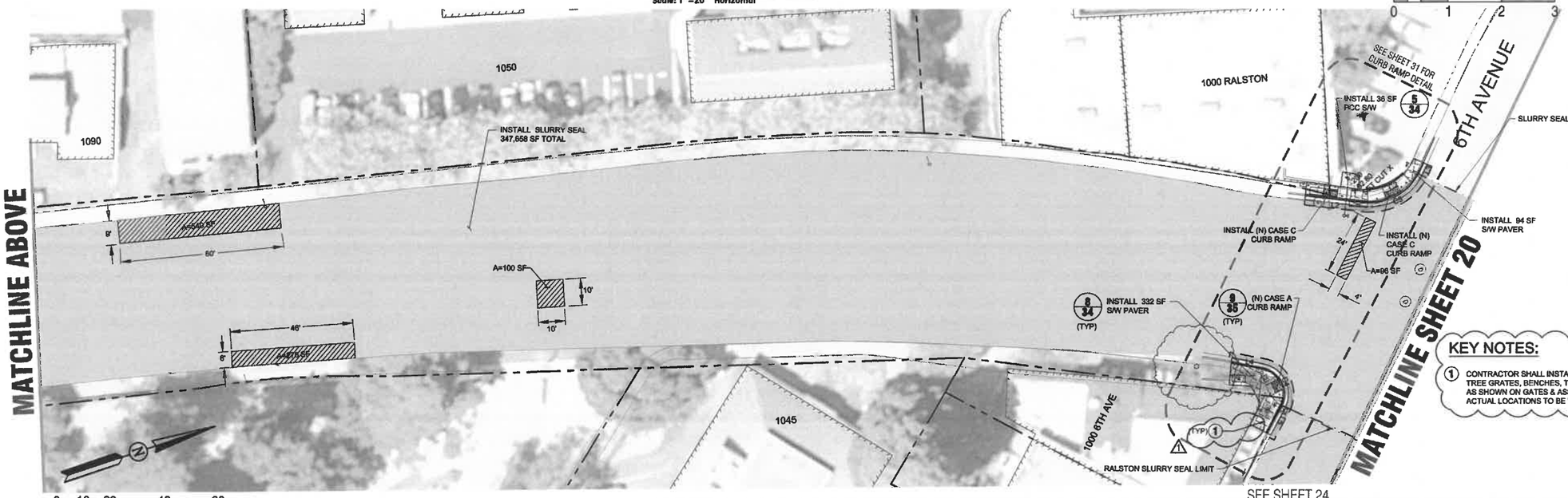
REGISTERED PROFESSIONAL ENGINEER
TREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA



RALSTON AVENUE
Scale: 1"=20' Horizontal



RALSTON AVENUE
Scale: 1"=20' Horizontal

SEE SHEET 24
FOR 6th AVENUE IMPROVEMENTS

NOTES:

1. SLOPES ARE APPROXIMATE AND SHOWN FOR REFERENCE. CONTRACTOR TO USE GRADES FOR CONSTRUCTION WHERE SHOWN ON THE PLANS
2. PROVIDE SMOOTH TRANSITION ALONG GRADE BREAKS, RIDGES, AND GRADE TRANSITIONS.
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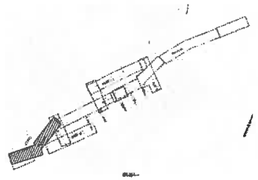

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
4	73.88	SET CUT X	2015568.99	6045797.07
200	98.20	SET CUT X	2016413.89	6046189.37

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AGENCY INDEX	
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CITY OF BELMONT - PUBLIC WORKS	(650) 595-7426
CITY OF BELMONT - POLICE	(650) 595-7400
AT&T	(800) 310-2355
PACIFIC GAS & ELECTRIC	(800) 743-5000
MID PENINSULA WATER DISTRICT	(650) 561-8541
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3600
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER — JEFF REY M. PETERSON — C41385 — CIVIL — STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

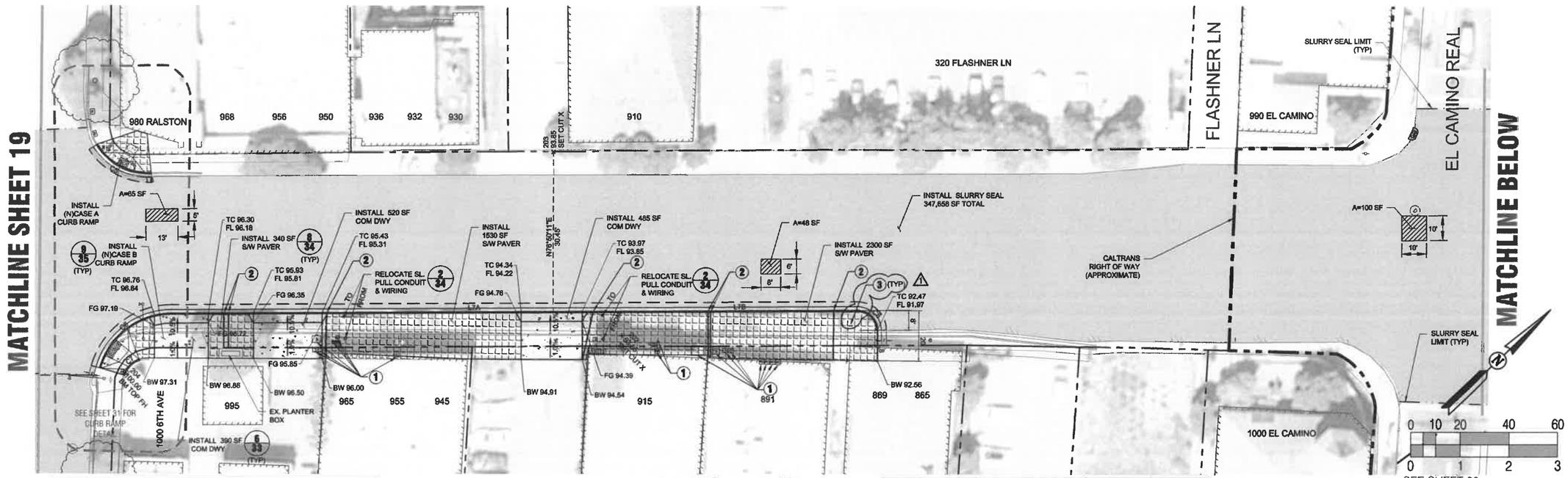
RALSTON AVENUE

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 19 OF 43

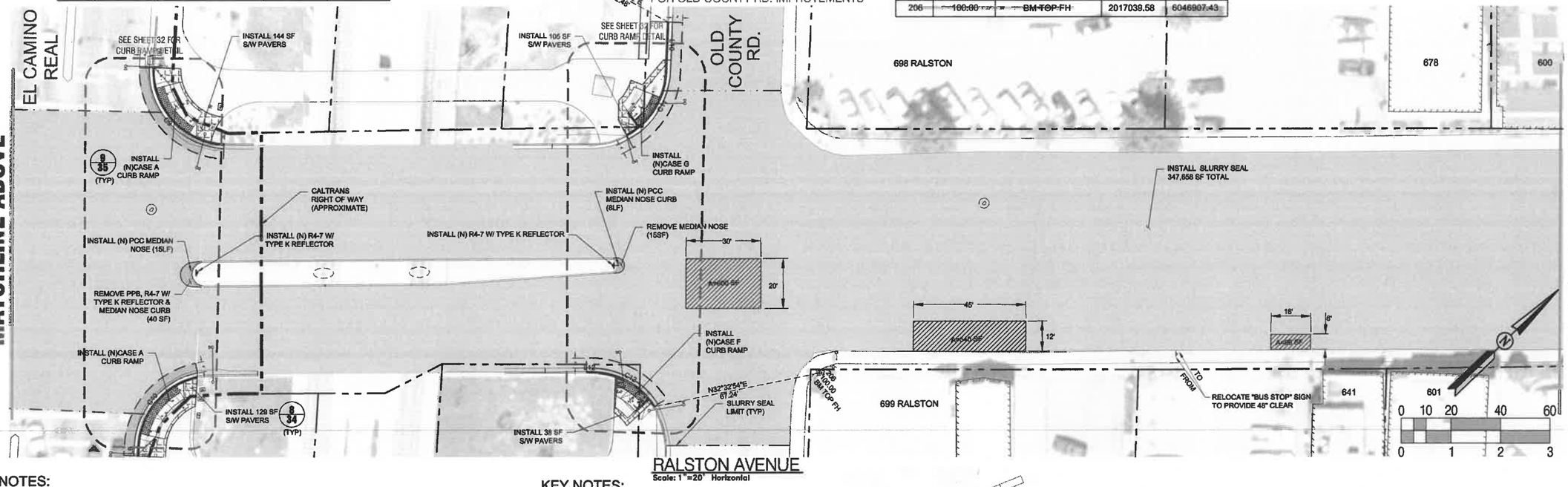


PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
202	93.85	SET CUT X	2016565.04	6046429.73
203	93.85	SET CUT X	2016596.54	6046356.48

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
204	100.00	BM TOP FH	2016409.34	6046299.59
205	96.38	SET CUT X	2017083.76	6046732.56
206	100.00	BM TOP FH	2017039.58	6046907.43

RALSTON AVENUE
Scale: 1" =20' Horizontal

SEE SHEET 27
FOR OLD COUNTY RD. IMPROVEMENTS



RALSTON AVENUE
Scale: 1" =20' Horizontal

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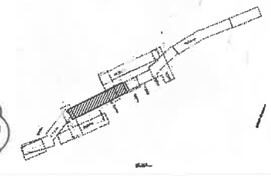
KEY NOTES:

1. ADJUST THE UTILITY BOXES TO GRADE (22 TOTAL)
2. EXTEND EX CURB DRAIN W/ (N) CURB DRAINS EXTENDED TO (N) FACE OF CURB (7 TOTAL CURB DRAINS, 122 LF TOTAL). CONNECT TO EX POC.
3. CONTRACTOR SHALL INSTALL PAVERS, CONCRETE SIDEWALK, TREE GRATES, BENCHES, TRASH RECEPTACLES AND BIKE RACKS AS SHOWN ON GATES & ASSOCIATES PLANS IN SPECIFICATIONS. ACTUAL LOCATION TO BE VERIFIED IN FIELD.



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REGISTERED PROFESSIONAL ENGINEER JEREMY M. PETERSEN C41585 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJS
Designed By: SM

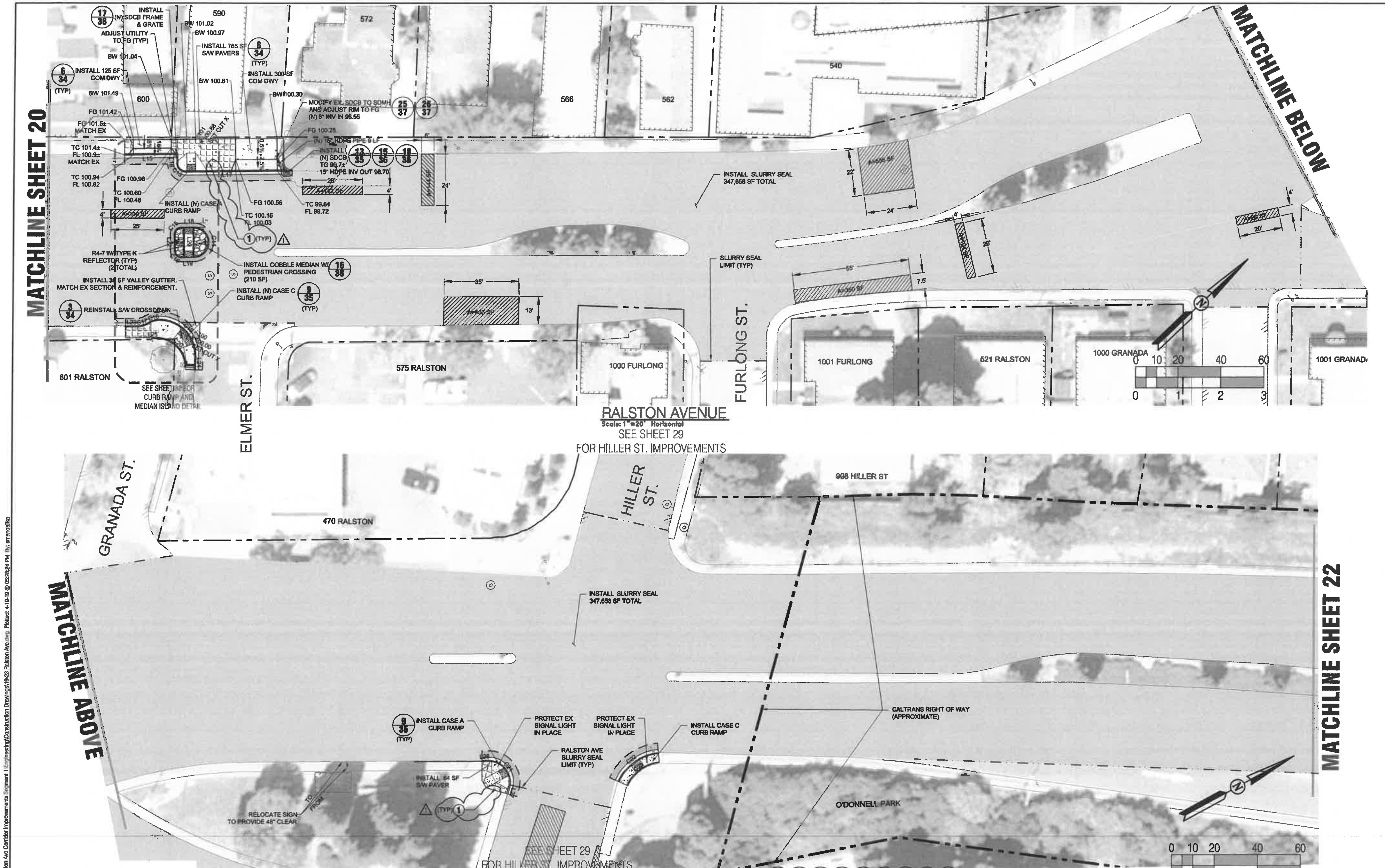
RALSTON AVENUE

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 20 OF 43



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PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
100	100.00	SET CUT X	2017305.13	6047158.26
101	100.86	SET CUT X	2017371.63	6047094.00

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MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. PETERSON C41385 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04-22-2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

RALSTON AVENUE

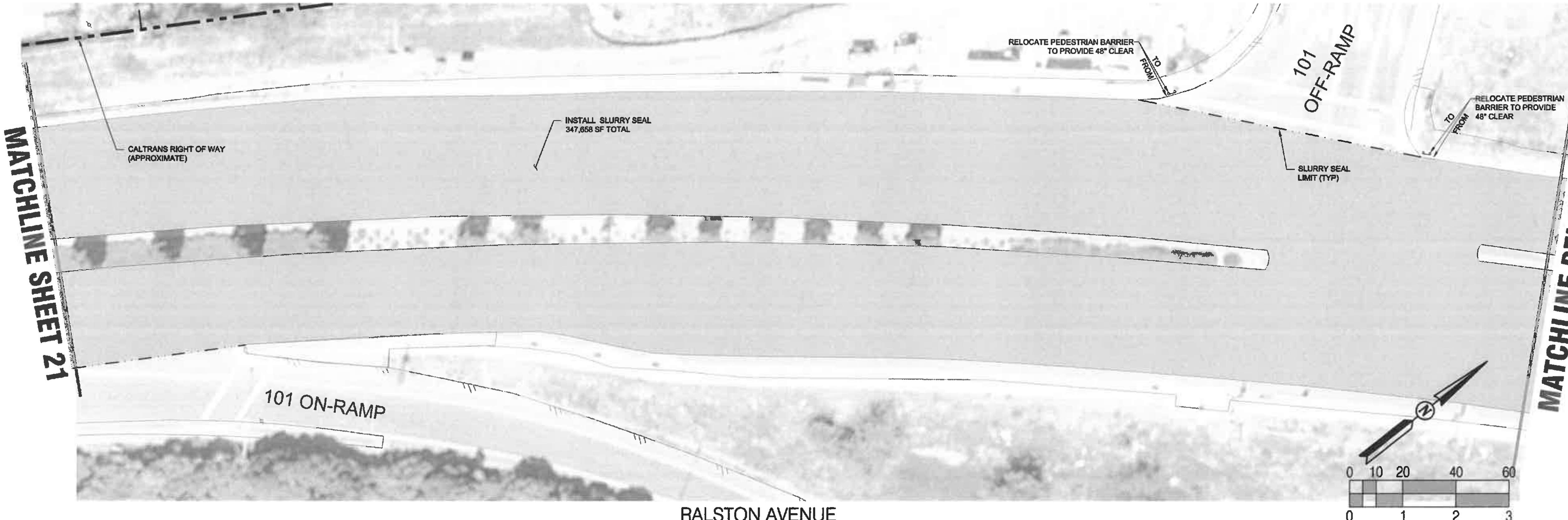
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 21 OF 43

File: H:\1020-TJKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\19-23 Ralston Ave.dwg Plotted: 4-19-19 @ 05:28:24 PM By: smandalika



RALSTON AVENUE
Scale: 1"=20' Horizontal

RALSTON AVENUE
Scale: 1"=20' Horizontal

NOTES:

1. SLOPES ARE APPROXIMATE AND SHOWN FOR REFERENCE. CONTRACTOR TO USE GRADES FOR CONSTRUCTION.
2. PROVIDE SMOOTH TRANSITION ALONG GRADE BREAKS, RIDGES, AND GRADE TRANSITIONS.
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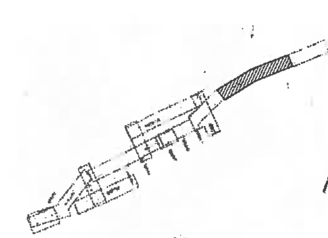

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3130 La Selva Street, Suite 100
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COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3900
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. PETERSON C41385 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

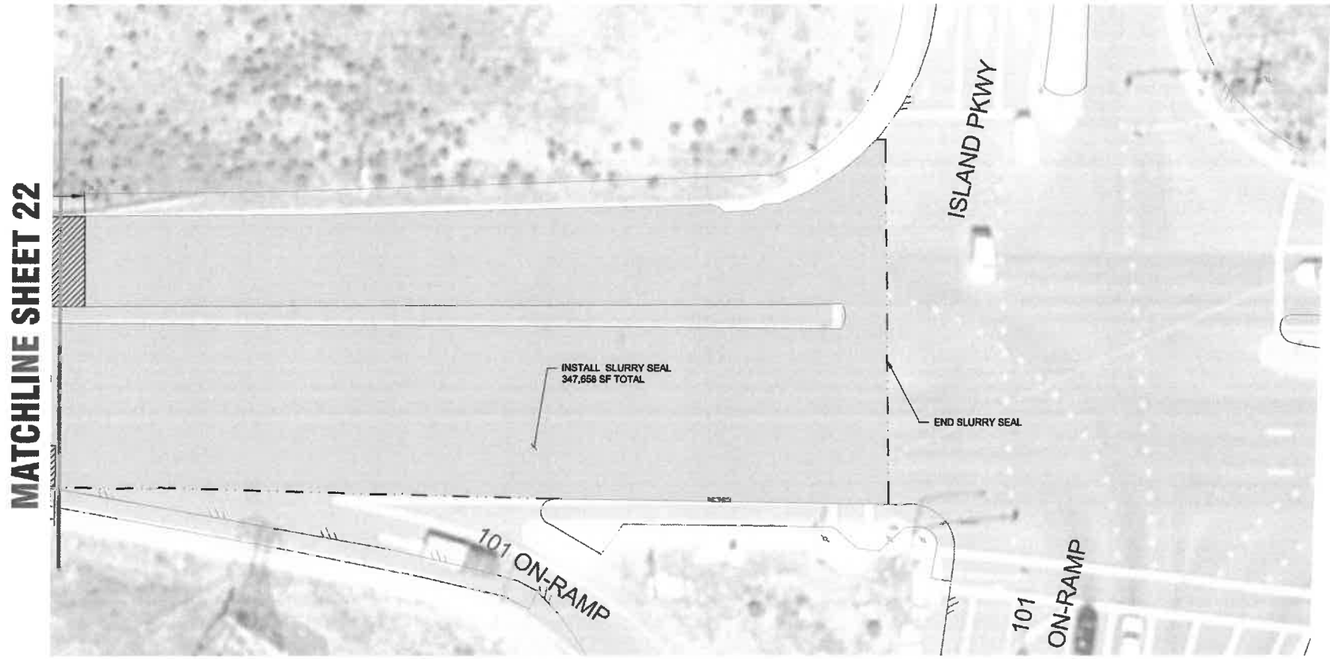
RALSTON AVENUE

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

File: H:\1020-TJKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\18-23 Ralston Ave.dwg Plotted: 4-19-19 @ 05:29:27 PM By: smandalika



RALSTON AVENUE
Scale: 1"=20' Horizontal

NOTES:

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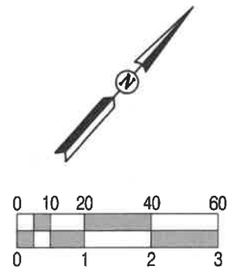


CURB ALIGNMENT - SHEET 19

LINE TABLE		
LINE	LENGTH	BEARING
L1	6.15	N72°32'00"W
L2	21.88	N25°16'30"E
L3	3.39	N47°11'09"W
L4	12.08	N29°21'29"E
L5	11.23	N43°55'21"E

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	24.56	4.00	03°31'07"
C2	14.92	19.96	42°49'16"
C3	25.30	20.00	72°28'40"
C4	18.63	10.00	106°43'10"

CURB ALIGNMENT - SHEET 20

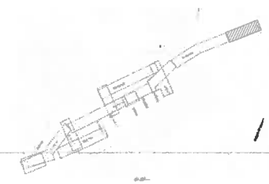
LINE TABLE		
LINE	LENGTH	BEARING
L6	0.98	N44°02'12"E
L7A	155.05	N43°46'55"E
L7B	123.58	N43°46'55"E
L8	12.60	N45°52'36"E
L9	4.13	N42°51'15"W
L10	20.33	N43°58'42"W
L11	7.52	N82°45'20"W
L12	2.14	N43°53'50"E
L13	7.99	N43°56'44"W
L14	7.51	N00°42'47"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C5	25.25	25.00	57°51'39"
C6	39.06	30.00	74°36'05"
C7	9.32	10.00	53°25'33"
C8	12.58	8.00	90°06'07"
C9	46.89	30.00	89°33'01"
C10	39.06	30.00	74°36'26"
C11	31.16	30.00	59°31'15"
C12	30.10	30.00	57°29'03"

CURB ALIGNMENT - SHEET 21

LINE TABLE		
LINE	LENGTH	BEARING
L15	24.66	N43°18'31"E
L16	4.26	N46°41'29"W
L17	49.78	N43°18'31"E
L18	6.17	N43°18'31"E
L19	6.17	N43°18'31"E
L20	14.00	N46°41'29"W
L21	14.00	N46°41'29"W
L22	14.00	N46°41'29"W
L23	5.46	N43°42'35"E
L24	6.11	N44°20'22"W
L25	2.48	N43°42'35"E
L26	3.16	N28°24'18"E
L27	3.10	N45°27'57"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C13	6.28	4.00	90°00'00"
C14	21.99	7.00	180°00'00
C15	4.71	3.00	90°00'00"
C16	4.71	3.00	90°00'00"
C17	5.55	10.00	31°47'18"
C18	5.55	10.00	31°47'18"
C19	27.28	17.00	91°57'03"
C20	21.67	13.50	91°57'03"
C21	18.52	10.00	106°07'45"
C22	24.19	23.00	60°15'23"
C23	19.53	18.50	60°29'53"



No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

RALSTON AVENUE
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

WILSEY HAM
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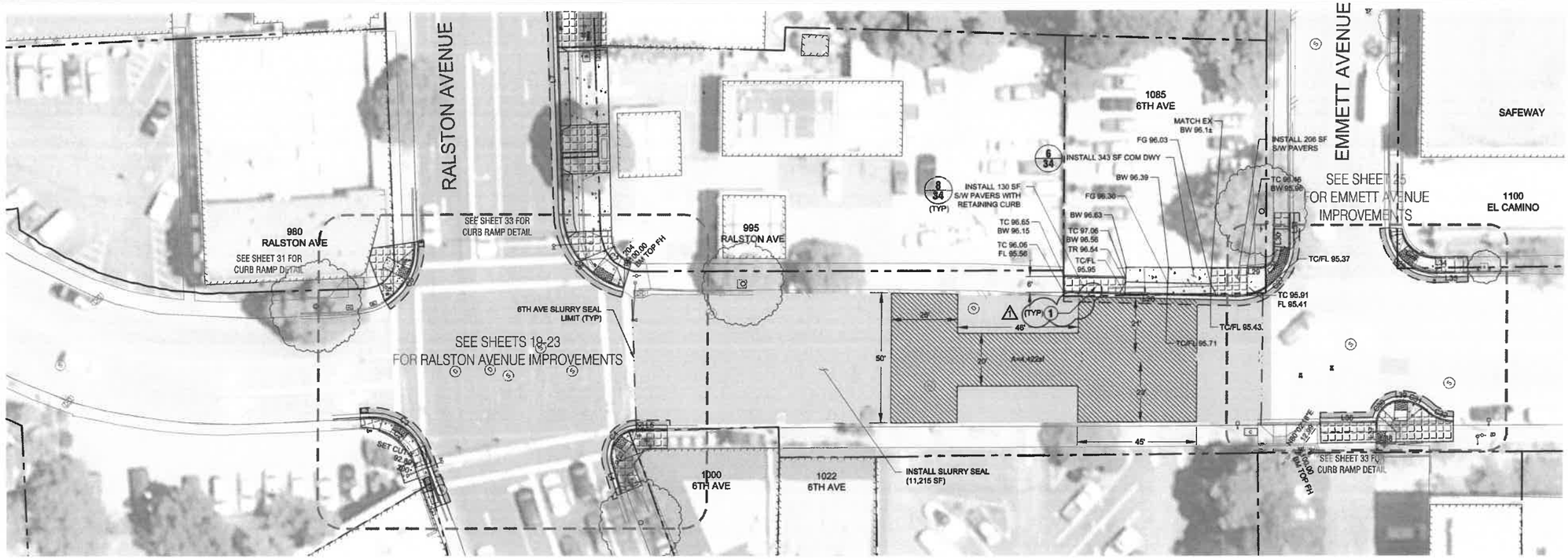
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(650) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA

SCALE:
AS SHOWN

SHEET:
23 OF 43



6th AVENUE
Scale: 1"=20' Horizontal

NOTES:

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KEY NOTES:

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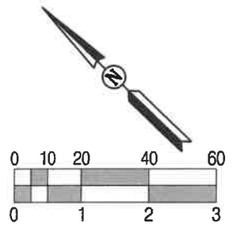
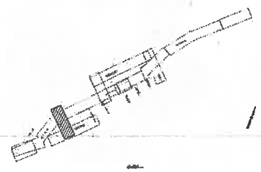
CURB ALIGNMENT

LINE TABLE		
LINE	LENGTH	BEARING
L2	21.88	N25°16'30"E
L3	3.39	N47°11'09"W
L4	12.08	N29°21'29"E
L5	11.23	N43°55'21"E
L6	0.98	N44°02'12"E
L7	278.63	N43°46'55"E
L28	65.14	N42°35'00"W
L29	5.00	N43°40'24"W
L30	9.72	N45°52'34"E
L31	11.63	N45°52'34"E
L32	NOT USED	NOT USED
L33	NOT USED	NOT USED
L34	2.52	N44°20'27"W
L35	11.69	N44°54'43"W
L36	21.54	N44°20'43"W
L37	6.89	N45°36'31"E
L38	7.50	N44°24'16"W
L39	1.43	N44°20'43"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C2	14.92	19.96	42°49'16"
C3	25.30	20.00	72°28'40"
C4	18.63	10.00	106°43'10"
C5	25.25	25.00	57°51'39"
C6	39.06	30.00	74°36'05"
C7	9.32	10.00	53°25'33"
C24	NOT USED	NOT USED	NOT USED
C25	NOT USED	NOT USED	NOT USED
C26	7.99	5.00	91°32'26"
C27	31.95	20.00	91°32'26"
C28	16.73	13.00	73°44'22"
C29	27.76	18.00	88°21'39"
C30	14.14	9.00	90°02'46"
C31	9.54	15.00	36°25'56"
C32	10.93	15.00	41°44'58"

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
6	100.00	BM TOP FH	2016175.84	6046426.12
200	98.20	SET CUT X	2016413.89	6046189.37
204	100.00	BM TOP FH	2016409.34	6046299.59





No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

6th AVENUE
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2
BELMONT, CALIFORNIA

SCALE: AS SHOWN
SHEET: 24 OF 43

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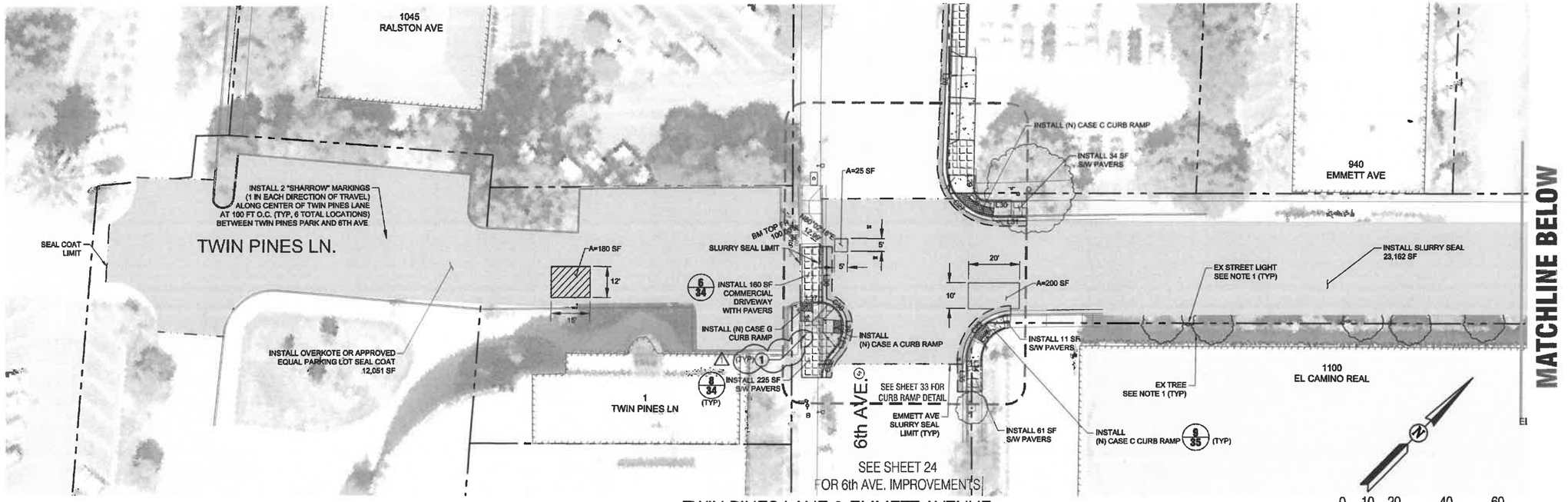
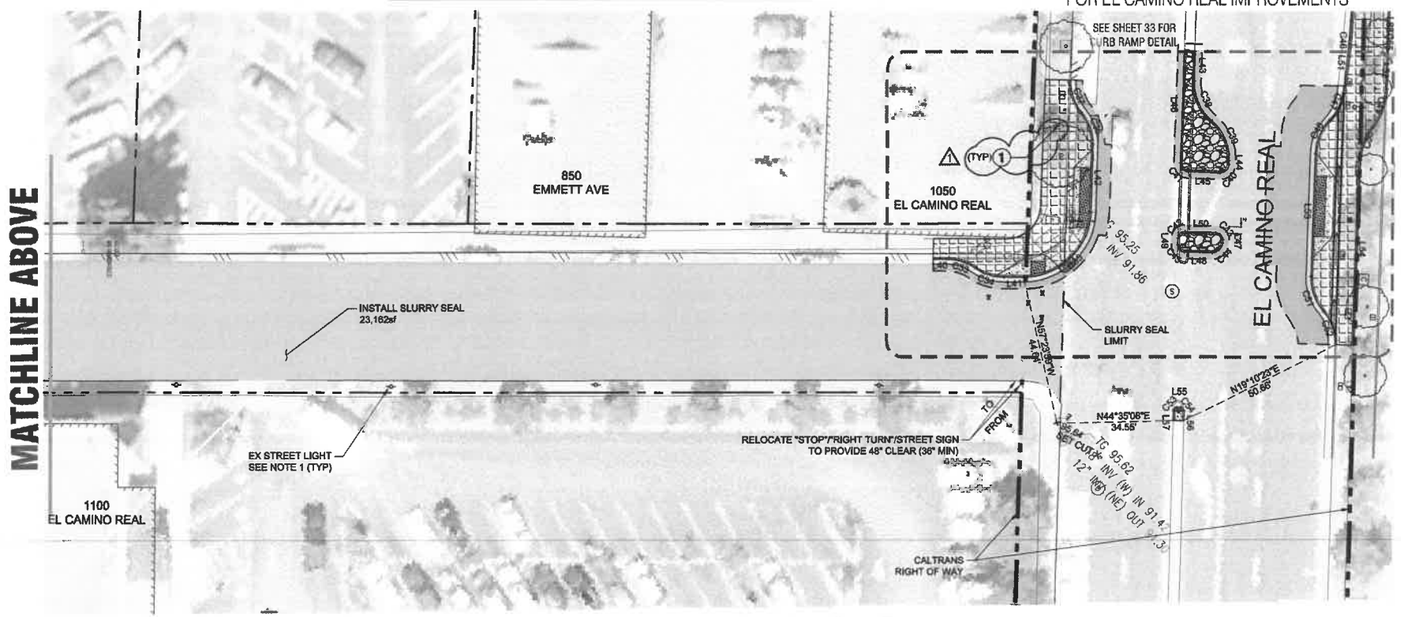
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3800
SAN MATEO COUNTY TRANSIT DISTRICT	(650) 508-6287

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA



TWIN PINES LANE & EMMETT AVENUE
Scale: 1" =20' Horizontal

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
6	100.00	BM TOP FH	2016175.84	6046426.12
7	95.64	SET CUT X	2016548.67	6046875.28



EMMETT AVENUE
Scale: 1" =20' Horizontal

NOTES:

1. ADA PATH OF TRAVEL CLEAR WIDTH REDUCED TO 3 FT AROUND 6 EXISTING STREET LIGHTS AND 5 EXISTING TREES BETWEEN 6TH AVE AND EL CAMINO REAL.
2. SLOPES ARE APPROXIMATE AND SHOWN FOR REFERENCE. CONTRACTOR TO USE GRADES FOR CONSTRUCTION.
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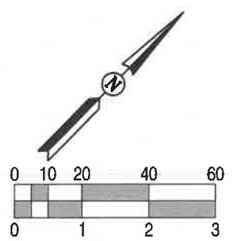
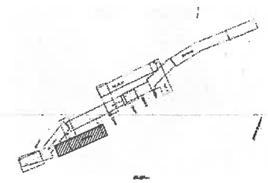
0 10 20 40 60
0 1 2 3





No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 23 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

TWIN PINES LANE & EMMETT AVENUE

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT, CALIFORNIA

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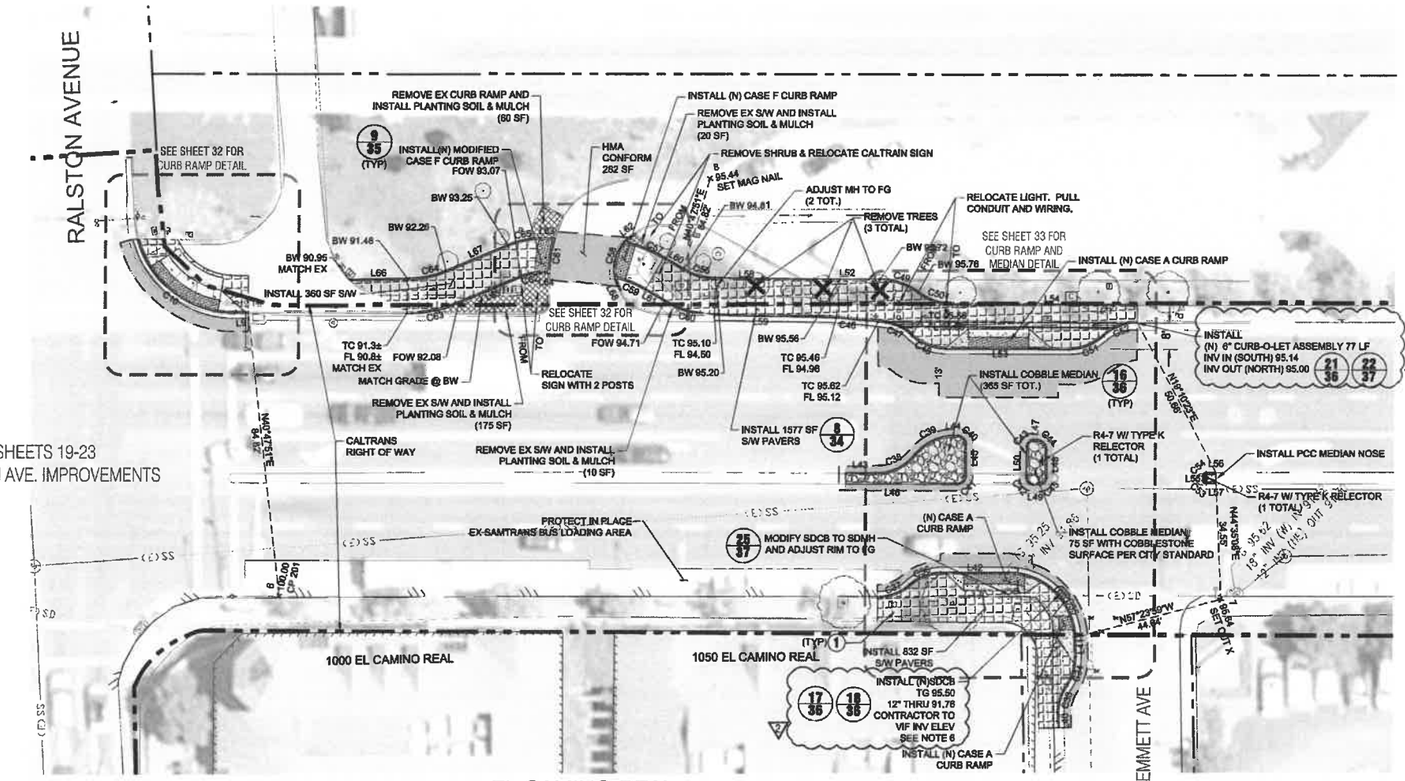
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETTIS
C41385
CIVIL
STATE OF CALIFORNIA

SCALE: AS SHOWN

SHEET: 25 OF 43



EL CAMINO REAL
Scale: 1"=20' Horizontal

CURB ALIGNMENT

LINE TABLE		
LINE	LENGTH	BEARING
L9	4.13	N42°51'15"W
L40	3.93	N45°44'58"E
L41	5.72	N45°37'44"E
L42	20.04	N42°50'48"W
L43	9.04	N42°29'00"W
L44	1.17	N42°24'30"W
L45	9.50	N47°44'19"E
L46	33.53	N42°25'18"W
L47	0.93	N42°08'03"W
L48	8.35	N47°05'49"E
L49	2.05	N42°41'50"W
L50	9.35	N47°51'57"E
L51	NOT USED	
L52	19.82	N42°45'50"W
L53	36.56	N42°29'15"W
L54	54.45	N42°29'15"W
L55	1.24	N47°05'02"E
L56	3.00	N43°15'43"W
L57	3.00	N42°54'58"W
L58	29.41	N41°54'17"W
L59	29.41	N41°54'17"W
L60	6.76	N12°09'06"W
L61	6.76	N12°09'06"W
L62	1.55	N79°00'03"W
L63	4.39	N42°40'21"W
L64	2.85	N42°40'21"W
L65	20.06	N65°23'18"W
L66	17.58	N43°49'51"W
L67	20.06	N65°23'18"W
L68	1.86	N23°09'23"E

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C33	9.10	15.00	34°45'33"
C34	9.13	15.00	34°52'47"
C35	30.88	20.00	88°28'32"
C36	10.13	15.00	38°40'33"
C37	10.59	15.00	40°26'18"
C38	13.41	15.00	51°13'56"
C39	13.43	15.00	51°18'22"
C40	3.93	2.50	90°08'49"
C41	3.92	2.50	89°50'23"
C42	3.16	2.00	90°33'47"
C43	3.14	2.00	90°00'00"
C44	4.67	3.00	89°13'52"
C45	3.15	2.00	90°12'20"
C46	21.74	175.00	07°07'06"
C47	4.06	15.00	34°36'21"
C48	11.04	15.00	42°10'59"
C49	12.45	19.50	36°34'37"
C50	11.29	18.00	35°56'05"
C51	11.31	15.00	43°12'02"
C52	10.98	14.50	43°24'02"
C53	1.57	1.00	90°00'00"
C54	1.56	1.00	89°39'15"
C55	NOT USED		
C56	9.74	18.75	29°45'10"
C57	12.25	41.24	17°01'12"
C58	16.30	12.00	77°50'33"
C59	9.07	30.00	17°19'00"
C60	15.58	30.00	29°45'10"
C61	10.65	37.00	16°29'18"
C62	5.95	15.00	22°47'57"
C63	15.89	40.00	22°45'52"
C64	11.10	29.50	21°33'27"
C65	10.11	25.50	22°42'57"

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
7	95.64	SET CUT X	2016548.67	6046875.28
8	95.44	SET MAG NAIL	2016746.07	6046863.38

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2. PROVIDE SMOOTH TRANSITION ALONG GRADE BREAKS, RIDGES, AND GRADE TRANSITIONS.
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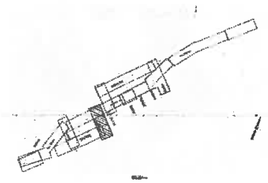
5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY REMOVED OR DAMAGED STRIPING IN KIND AND/OR AS SHOWN ON THE SIGNAGE AND STRIPING PLAN (SHEETS 3 - 9) IN AREAS WHERE THE EXISTING STRIPING AND PROPOSED STRIPING PLAN DIFFER, THE PROPOSED STRIPING PLAN SHALL GOVERN.
6. NEW CATCH BASIN IN CALTRANS RIGHT OF WAY TO BE MAINTAINED BY THE CITY OF BELMONT.



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Engineering, Surveying & Planning
3130 La Selva Street, Suite 100
San Mateo, CA 94403
650.349.2151
wilseyham.com

AGENCY INDEX

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PACIFIC GAS & ELECTRIC	(800) 743-5000
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

No.	Revision	Date	By	Chkd
1	CALTRANS 8419-NWC-0230 COMMENTS	05-15-2019	SM	JP
2	CALTRANS 8419-NWC-1276 COMMENTS	08-21-2019	SM	SAW

Date: JUNE 27, 2019
Drawn By: PJB
Designed By: SM

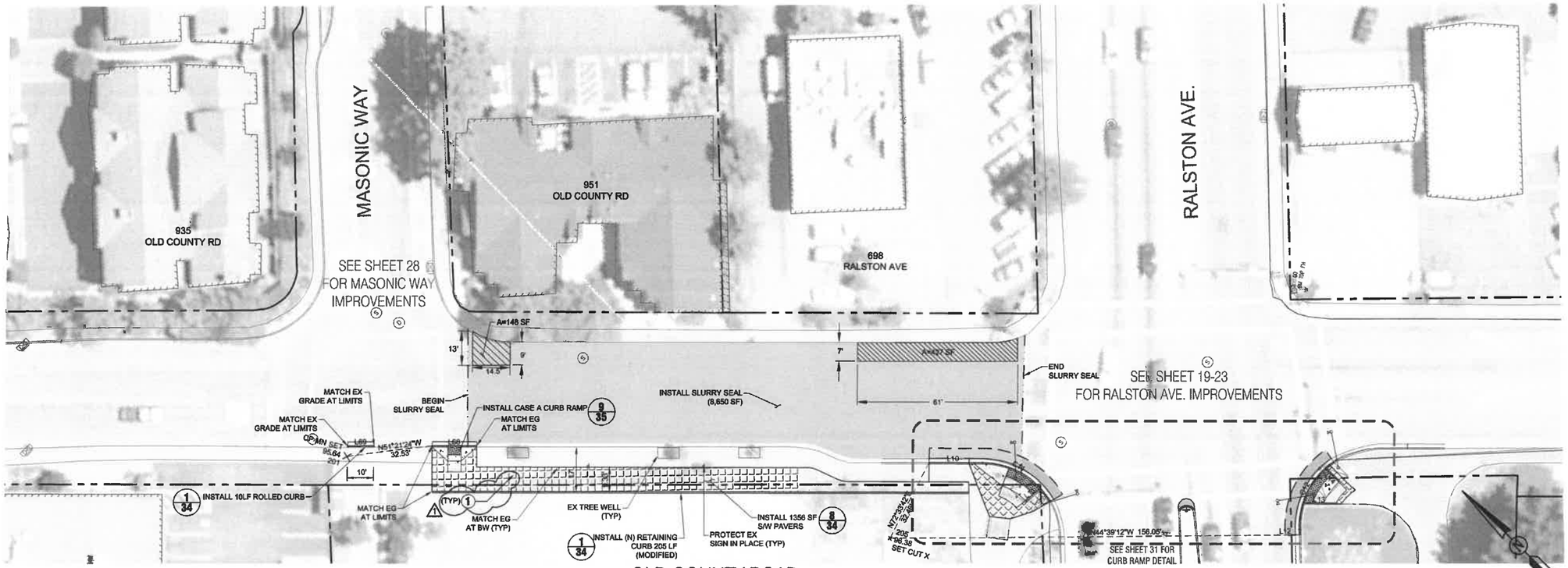
EL CAMINO REAL

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 26 OF 43



OLD COUNTY ROAD
Scale: 1"=20' Horizontal

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
201	95.64	CP MN SET	2017254.41	6046610.65
205	96.38	SET CUT X	2017083.76	6046732.56

NOTES:

1. SLOPES ARE APPROXIMATE AND SHOWN FOR REFERENCE. CONTRACTOR TO USE GRADES FOR CONSTRUCTION.
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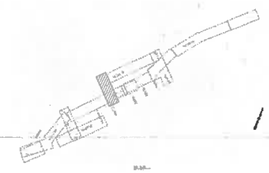
KEY NOTES:

(1) CONTRACTOR SHALL INSTALL PAVERS, CONCRETE SIDEWALK, TREE GRATES, BENCHES, TRASH RECEPTACLES AND BIKE RACKS AS SHOWN ON GATES & ASSOCIATES PLANS IN SPECIFICATIONS. ACTUAL LOCATIONS TO BE VERIFIED IN FIELD.

CURB ALIGNMENT

LINE TABLE		
LINE	LENGTH	BEARING
L10	20.33	N43°58'42"W
L11	7.52	N62°45'20"W
L12	2.14	N43°53'50"E
L13	7.99	N43°56'44"W
L14	7.51	N00°42'47"W
L68	16.93	N44°11'04"W
L69	7.51	N44°11'04"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C11	31.16	30.00	59°31'15"
C12	30.10	30.00	57°29'03"



No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

OLD COUNTY ROAD
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 27 OF 43

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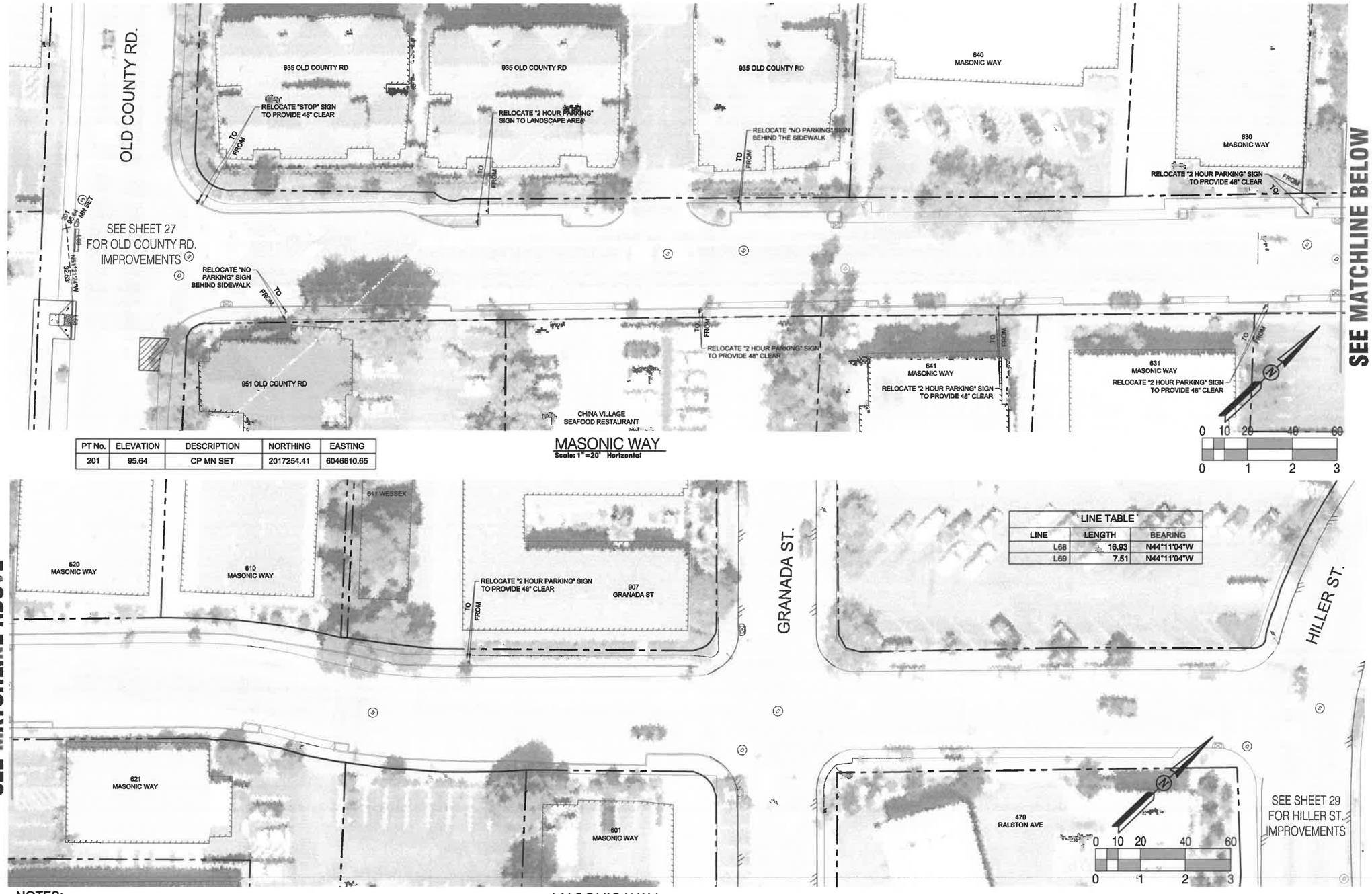
COMCAST	(650) 356-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 593-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
FREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA



MASONIC WAY
Scale: 1" =20' Horizontal

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
201	95.64	CP MN SET	2017254.41	6046610.65

MASONIC WAY
Scale: 1" =20' Horizontal

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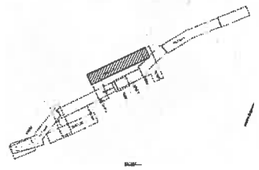

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PACIFIC GAS & ELECTRIC	(800) 743-5000
MID PENINSULA WATER DISTRICT	(650) 581-8641
COMCAST	(800) 266-2278
REDOLOGY - GARBAGE/RECYCLING	(650) 595-3600
SAN MATEO COUNTY TRANSIT DISTRICT	(650) 800-4287

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

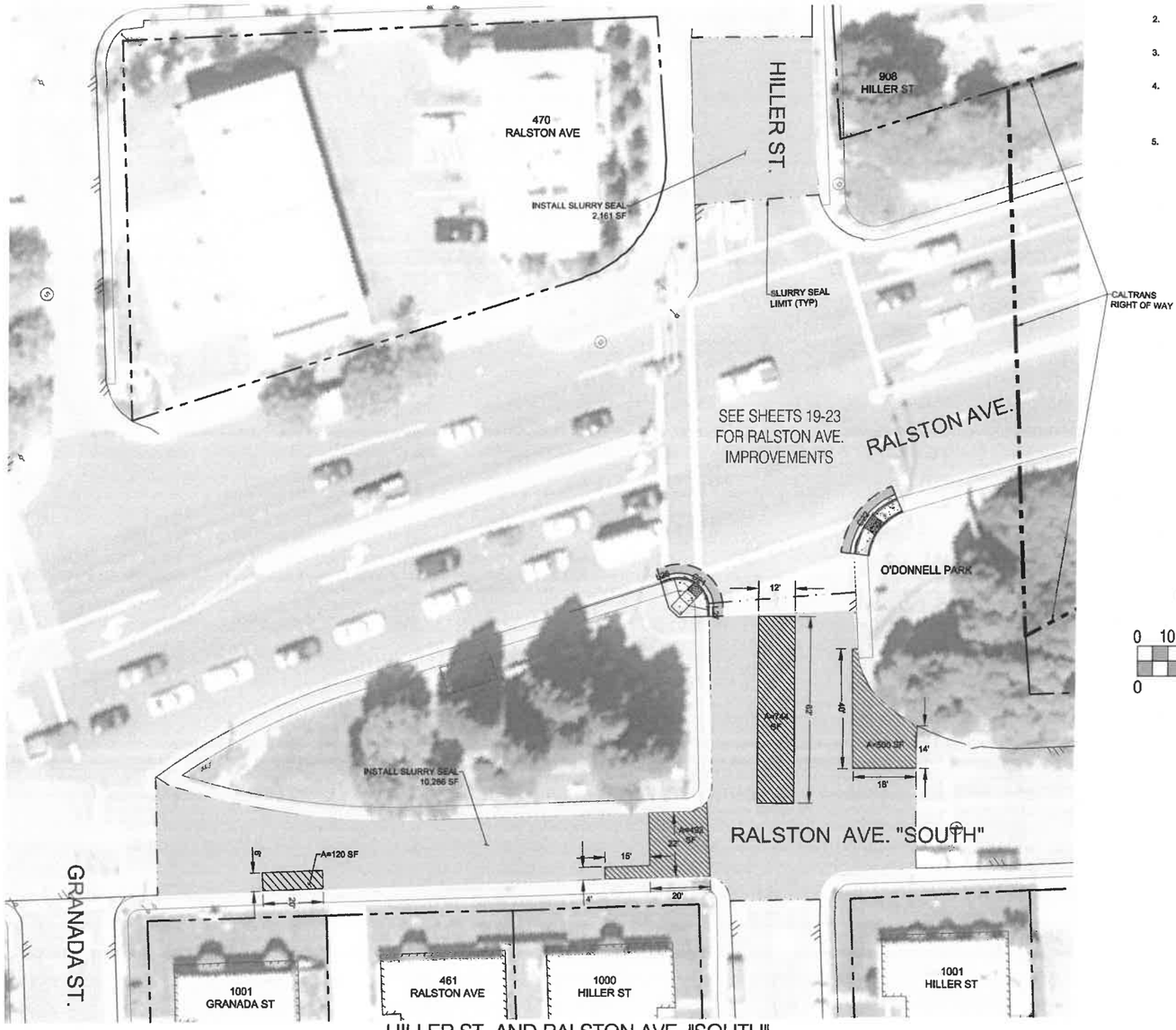
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2
MASONIC WAY

CITY OF BELMONT
BELMONT, CALIFORNIA

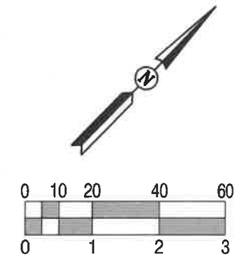
SCALE: AS SHOWN

SHEET: 28 OF 43

SEE SHEET 28
FOR MASONIC WAY IMPROVEMENTS



HILLER ST. AND RALSTON AVE. "SOUTH"
Scale: 1"=20' Horizontal



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CURB ALIGNMENT

LINE TABLE		
LINE	LENGTH	BEARING
L26	3.16	N28°24'18"E
L27	3.10	N45°27'57"W

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C21	18.52	10.00	106°07'45"
C22	24.19	23.00	60°15'23"
C23	19.53	18.50	60°29'53"

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

HILLER STREET AND
RALSTON AVENUE "SOUTH"

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT
1 & 2

BELMONT, CALIFORNIA

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CITY OF BELMONT - POLICE	(650) 595-7400
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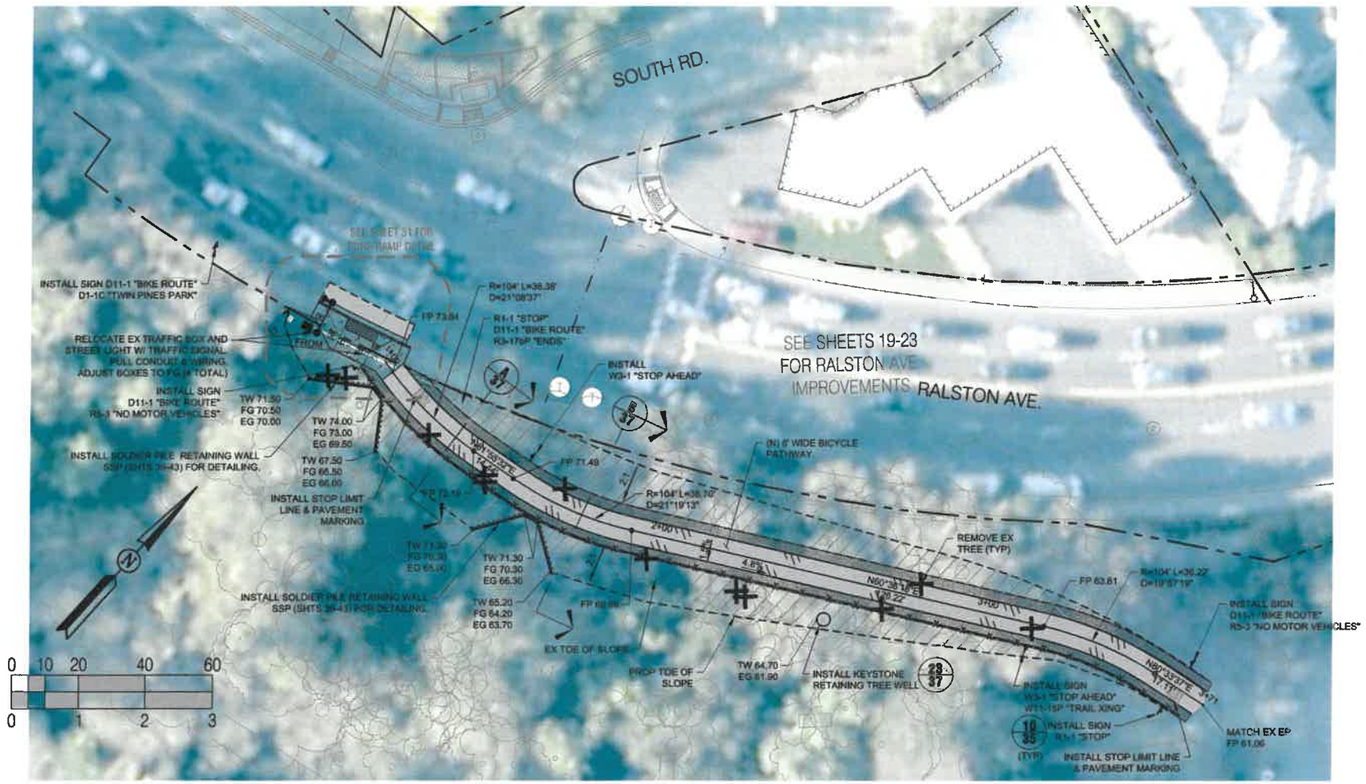
MID PENINSULA WATER DISTRICT	(650) 561-8541
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

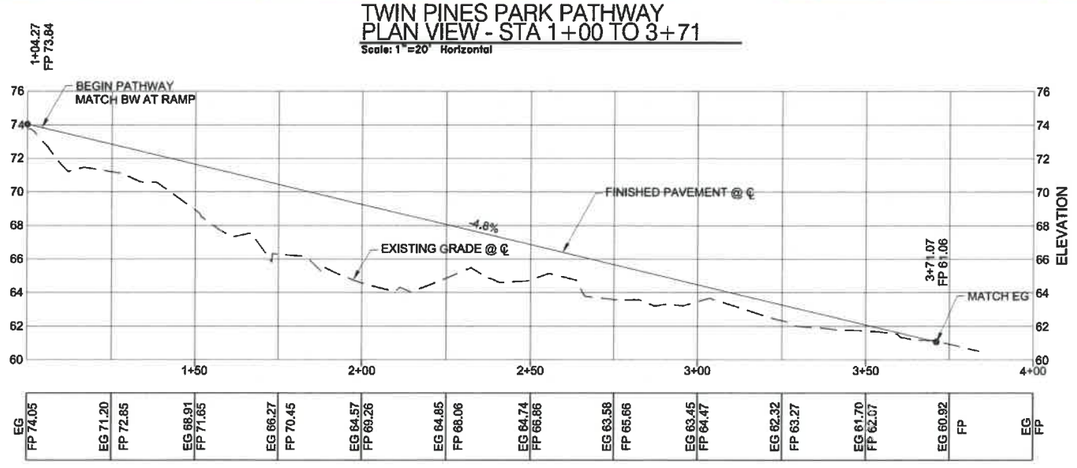
REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERSEN
C41385
CIVIL
STATE OF CALIFORNIA

SCALE: AS SHOWN
SHEET: 29 OF 43

File: H:\1020-1\JKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\09 Hiller St and Ralston Ave South.dwg Plotted: 4-22-19 @ 08:16:55 AM By: smandalika



TWIN PINES PARK PATHWAY
PLAN VIEW - STA 1+00 TO 3+71
Scale: 1"=20' Horizontal



TWIN PINES PARK PATHWAY
PROFILE - STA 1+00 TO 3+71
Scale: 1"=20' Horizontal
1"=4' Vertical

LEGEND

- LIMIT OF GRADING
- PROP PATCH HAND RAIL
- PROP TOP OF SLOPE
- PROP TOE OF SLOPE
- AREA OF GRADING
- TREE TO BE REMOVED
- STUMP TO BE REMOVED
- PROP HOT MIX ASPHALT
- PROP DECOMPOSED GRANITE
- PROP SOLDIER PILE RETAINING WALL
- PROP TREE WELL

ABBREVIATIONS

EG	EXISTING GRADE
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
FP	FINISHED PAVEMENT
R	RADIUS
L	LENGTH
D	DEFLECTION
SSP	SEE STRUCTURAL PLAN
LT	LEFT
RT	RIGHT

NOTES

1. PAVEMENT SLOPES ARE APPROXIMATE AND SHOWN FOR REFERENCE ONLY. CONTRACTOR TO USE GRADES FOR CONSTRUCTION.
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4. CONTRACTOR SHALL COORDINATE WITH CITY ARBORIST AND PARKS DEPARTMENT SEVENTY-TWO (72)HOURS PRIOR TO ANY TREE REMOVAL.
5. CONTRACTOR SHALL PROTECT ALL TREES TO REMAIN WITHIN PROJECT IMPACT AREA BY INSTALLING FENCING 5 FEET OFFSET FROM FACE OF TREE, PER DETAIL 20 ON SHEET 38. WHERE TREE CANOPY COVERS PROPOSED CONSTRUCTION FOOT PRINT, CONTRACTOR SHALL CONTACT CITY ARBORIST FOR RECOMMENDATION.
6. DIMENSIONS OF NEW SIGNAGE WITHIN PARK SHALL MEET CITY OF BELMONT PARKS DEPARTMENT STANDARDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO CITY FOR REVIEW PRIOR TO ORDER.

PATHWAY GRADING EQUATION:

ES LT = FP + 0.10

EP LT = FP + 0.06

EP RT = FP - 0.06

ES RT = FP - 0.10

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

TWIN PINES PARK PATHWAY

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT, CALIFORNIA

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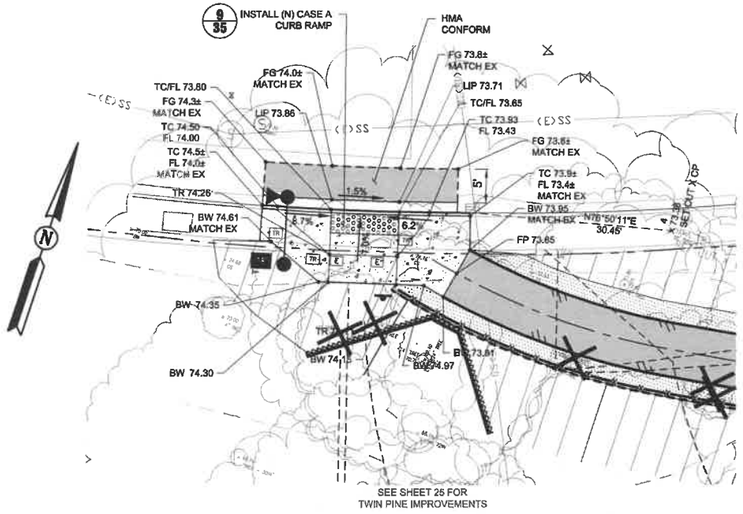
MID PENINSULA WATER DISTRICT	(650) 561-0641
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-3000
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER JEFFREY M. PETERSEN C41385 CIVIL STATE OF CALIFORNIA

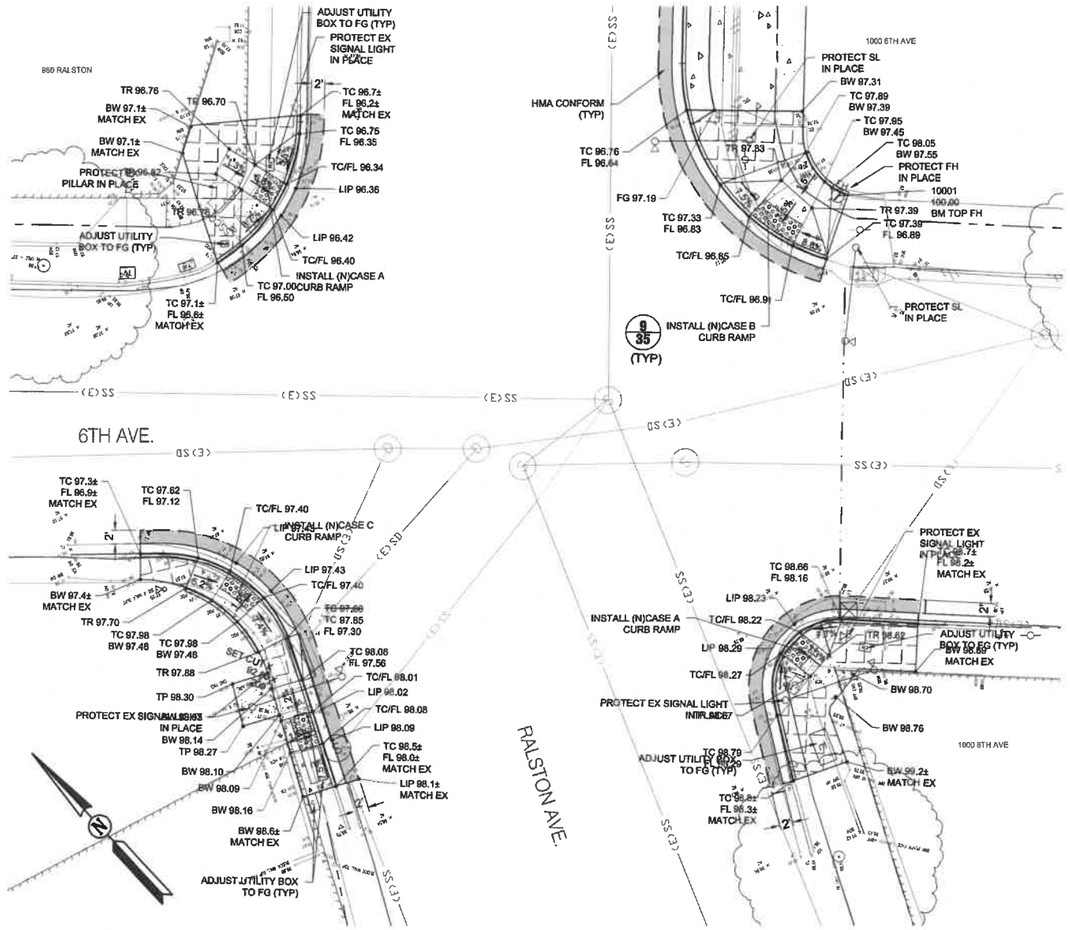
SCALE: AS SHOWN

SHEET: 30 OF 43

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
4	73.38	SET CUT X CP	2015568.99	6045797.07
200	92.80	SET CUT X	2016413.89	6046189.37
10001	100.00	BM TOP FH	2016409.34	6046299.59



RALSTON AVE & SOUTH RD
Scale: 1"=10' Horizontal



RALSTON AVE & 6TH AVE
Scale: 1"=10' Horizontal

NOTES

1. ANY SURFACE UTILITIES, SUCH AS MANHOLES, VALVES, MONUMENTS, DRAIN INLETS, DETECTOR HANDHOLES AND UTILITY BOXES SHOWN TO BE WITHIN CONSTRUCTION LIMITS SHALL BE ADJUSTED IN ELEVATION TO MATCH THE FINISHED GRADE. UTILITY COVERS SHALL NOT BE STRIPED OVER.
2. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO CURRENT CALTRANS STANDARD SPECIFICATIONS AND STANDARD PLANS AND TO THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD).
3. ALL TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND CONFORM TO SECTION 84 OF THE CALTRANS STANDARDS SPECIFICATIONS.
4. CROSSWALKS, STOP BARS, AND LEGENDS SHALL CONFORM TO CALTRANS STANDARD PLANS A24D AND A24E.
5. ALL EXISTING SIGNAGE SHALL REMAIN IN PLACE.
6. PROTECT AND/OR REPLACE ALL SURVEY MONUMENTS LOCATED IN WORK AREA.

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REGISTERED PROFESSIONAL ENGINEER JEFFREY M. PETERSEN C41385 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04 - 22 - 2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

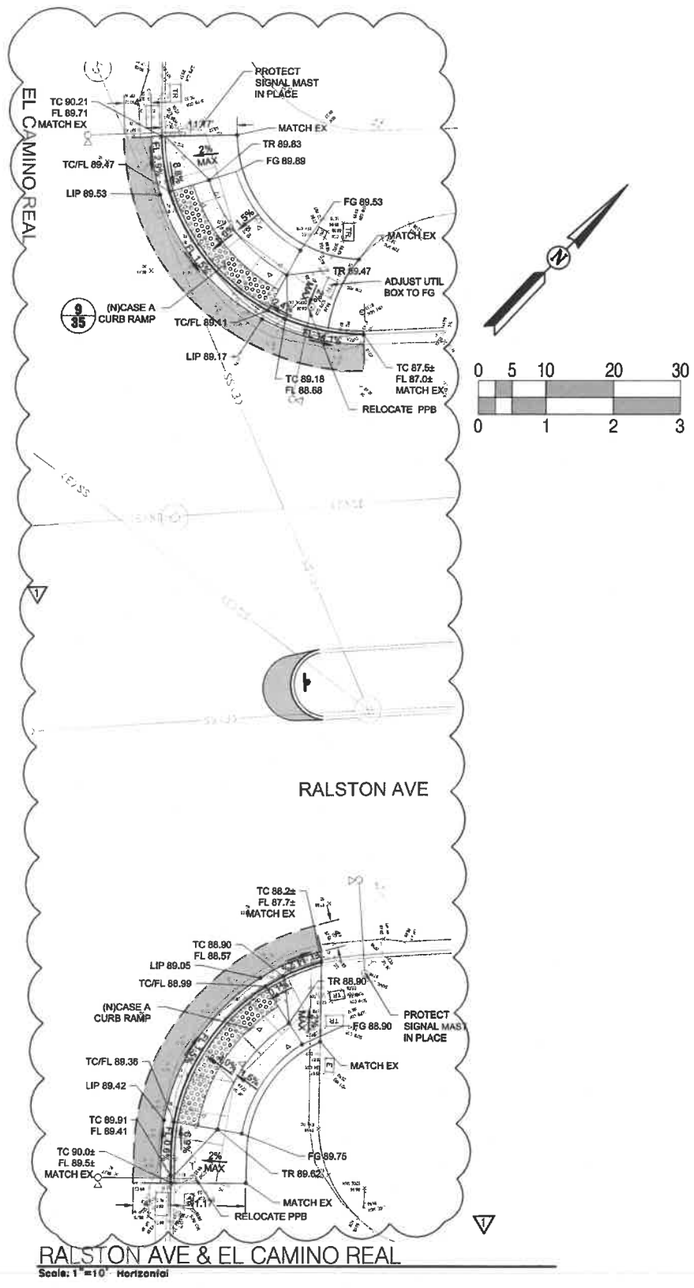
CURB RAMP DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

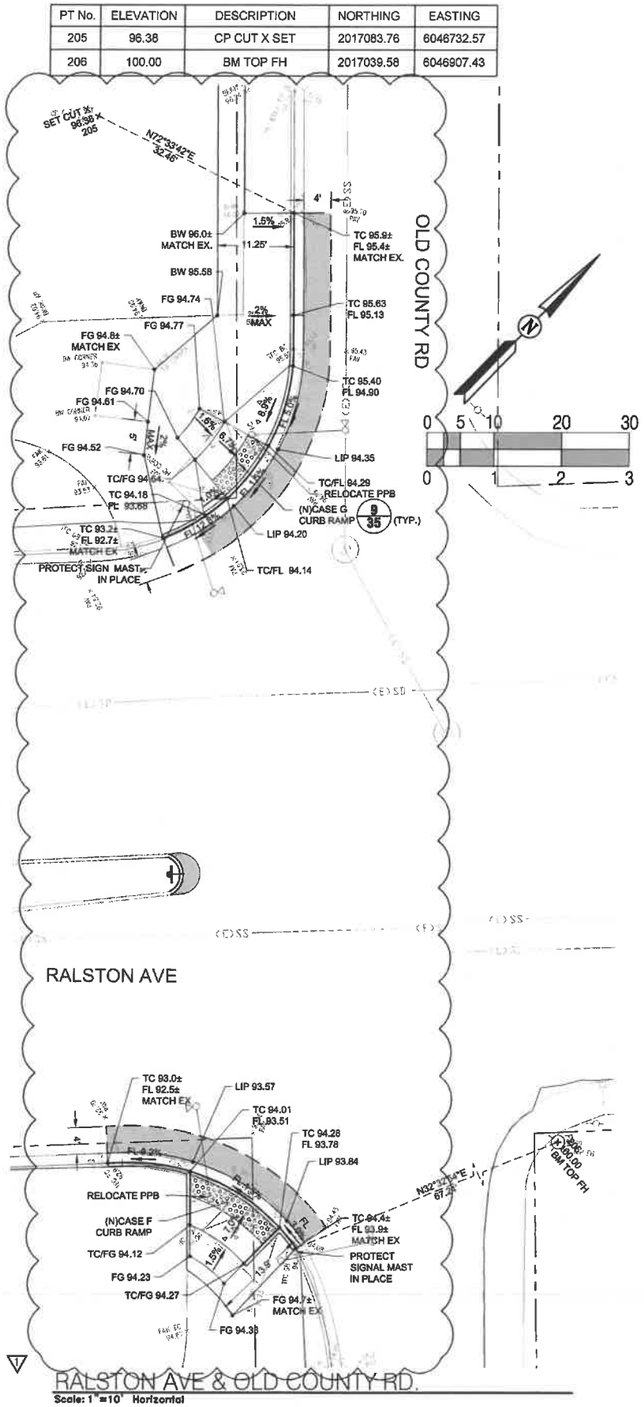
SHEET: 31 OF 43



RALSTON AVE & EL CAMINO REAL

Scale: 1"=10' Horizontal

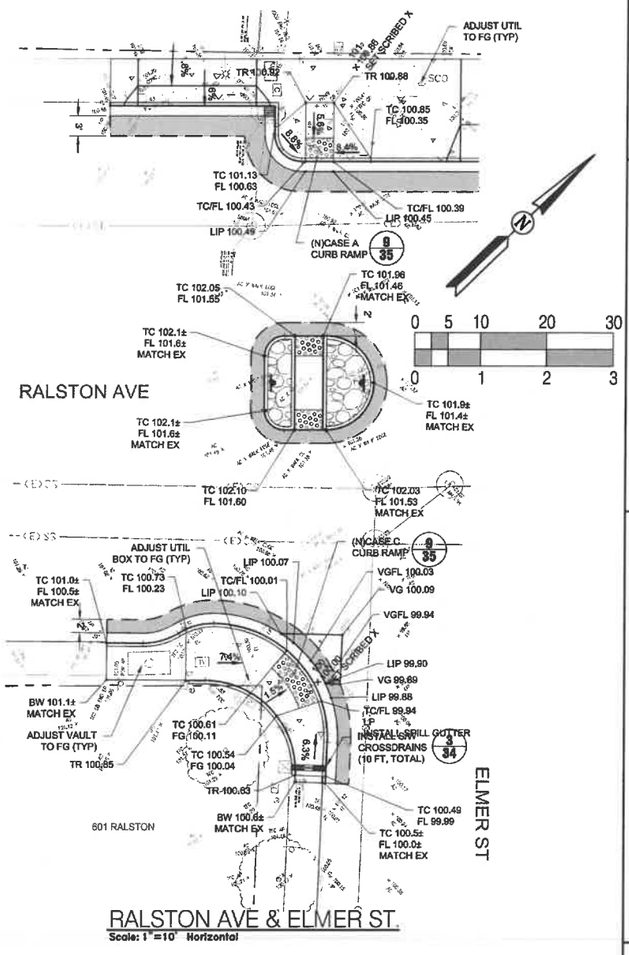
PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
205	96.38	CP CUT X SET	2017083.76	6046732.57
206	100.00	BM TOP FH	2017039.58	6046907.43



RALSTON AVE & OLD COUNTY RD.

Scale: 1"=10' Horizontal

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
100	100.00	SET SCRIBED X	2017305.13	6047158.26
101	100.86	SET SCRIBED X	2017371.63	6047095.00



RALSTON AVE & ELMER ST.

Scale: 1"=10' Horizontal

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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER
KEITH A. WARNER
83281
CIVIL
STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS REVISIONS	05-15-2019	SM	JP

Date: MAY 15, 2019
Drawn By: PJB
Designed By: SM

CURB RAMP DETAILS

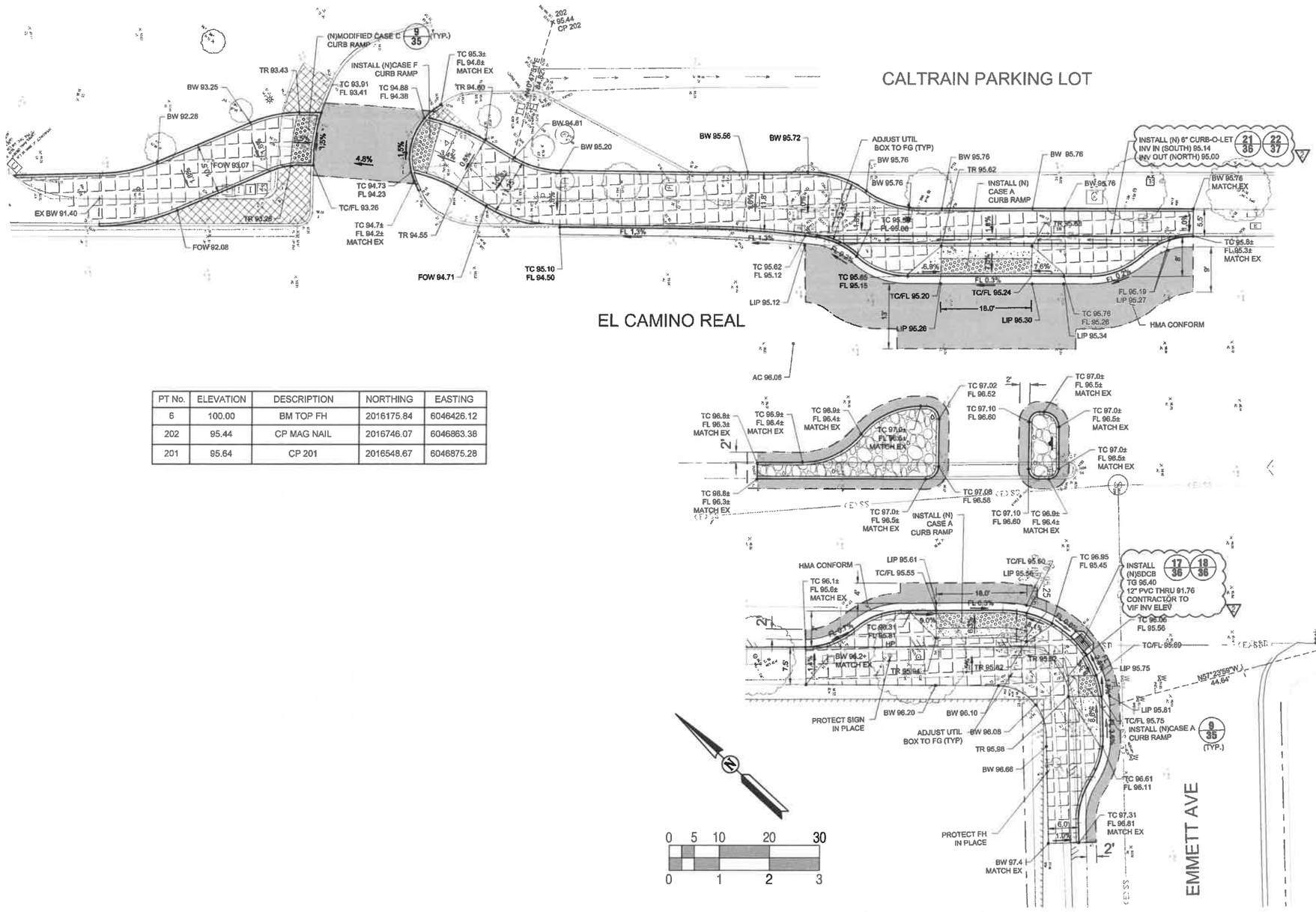
DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 32 OF 43

File: H:\1650-T&M\1650-001 T,M\Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\32 Curb Details.dwg Plotted: 5-29-19 @ 04:48:47 PM By: pbustinger



EL CAMINO REAL & EMMETT AVE
Scale: 1"=10' Horizontal

PT No.	ELEVATION	DESCRIPTION	NORTHING	EASTING
6	100.00	BM TOP FH	2016175.84	6046426.12
202	95.44	CP MAG NAIL	2016746.07	6046863.38
201	95.64	CP 201	2016548.67	6046875.28

NOTES

1. ANY SURFACE UTILITIES, SUCH AS MANHOLES, VALVES, MONUMENTS, DRAIN INLETS, DETECTOR HANDHOLES AND UTILITY BOXES SHOWN TO BE WITHIN CONSTRUCTION LIMITS SHALL BE ADJUSTED IN ELEVATION TO MATCH THE FINISHED GRADE. UTILITY COVERS SHALL NOT BE STRIPED OVER.
2. SIGNAGE, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO CURRENT CALTRANS STANDARD SPECIFICATIONS AND STANDARD PLANS AND TO THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD).
3. ALL TRAFFIC STRIPES AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND CONFORM TO SECTION 84 OF THE CALTRANS STANDARDS SPECIFICATIONS.
4. CROSSWALKS, STOP BARS, AND LEGENDS SHALL CONFORM TO CALTRANS STANDARD PLANS A24D AND A24E.
5. ALL EXISTING SIGNAGE SHALL REMAIN IN PLACE.
6. PROTECT AND/OR REPLACE ALL SURVEY MONUMENTS LOCATED IN WORK AREA.

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-RIRC-0229 COMMENTS	05-15-2019	SM	JP
2	CALTRANS 0419-RIRC-1276 COMMENTS	06-21-2019	SM	SAW

Date: JUNE 27, 2019
Drawn By: PJB
Designed By: SM

CURB RAMP DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 33 OF 43

WILSEY HAM
Engineering, Surveying & Planning
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650.349.2151
wilseyham.com

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CITY OF BELMONT - POLICE	(650) 595-7400
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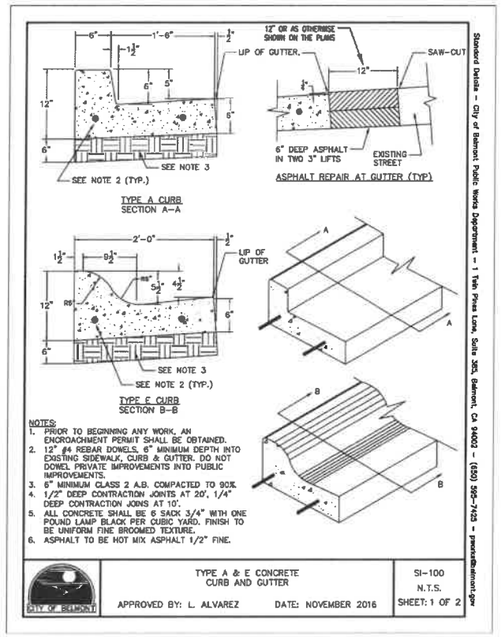
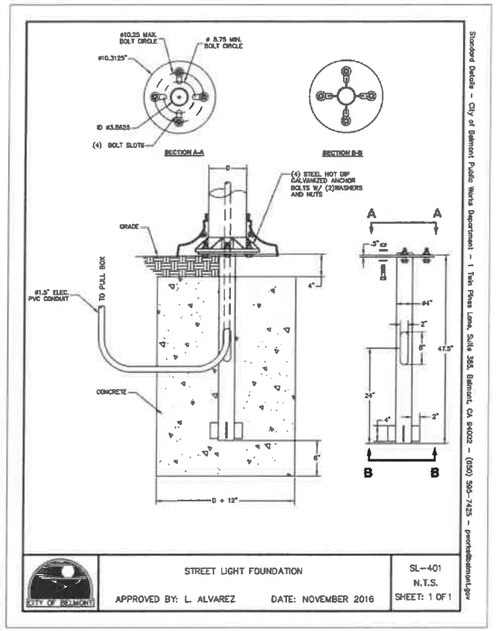
MID PENINSULA WATER DISTRICT	(650) 591-8941
COMCAST	(800) 266-2278
RECOLOGY - GARBAGE/RECYCLING	(650) 595-5900
SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

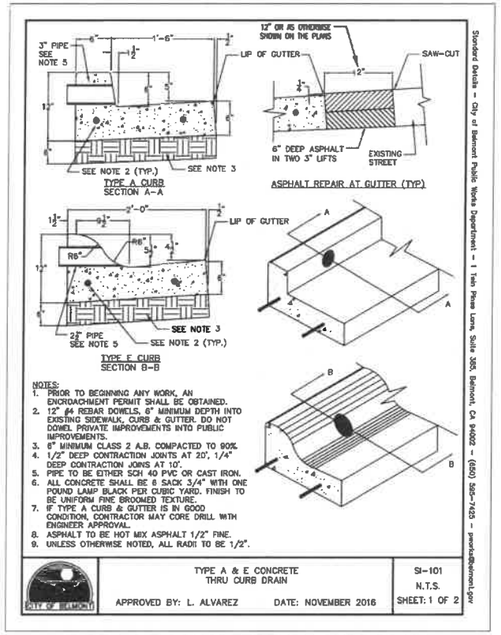
REGISTERED PROFESSIONAL ENGINEER SETH A. WARREN 83281 CIVIL STATE OF CALIFORNIA



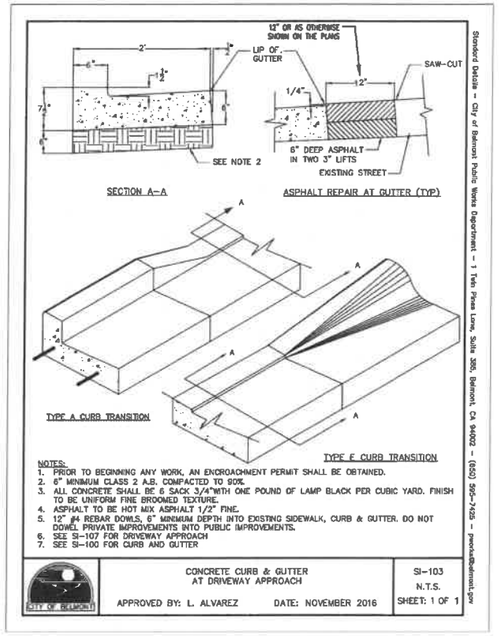
1 TYPE A & E CONCRETE CURB AND GUTTER
CITY STANDARD DETAIL SI-100
NOT TO SCALE



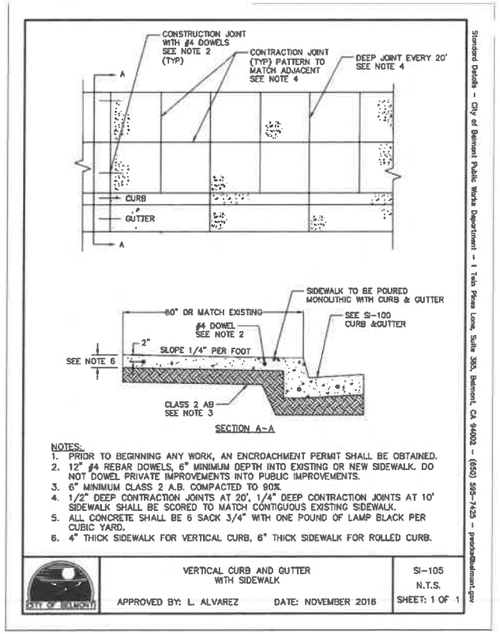
2 STREET LIGHT FOUNDATION
CITY STANDARD DETAIL SL-401
NOT TO SCALE



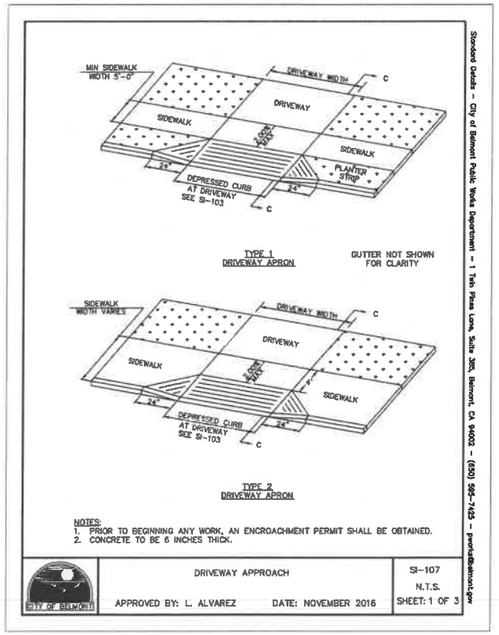
3 TYPE A & E CONCRETE THRU CURB DRAIN
CITY STANDARD DETAIL SI-101
NOT TO SCALE



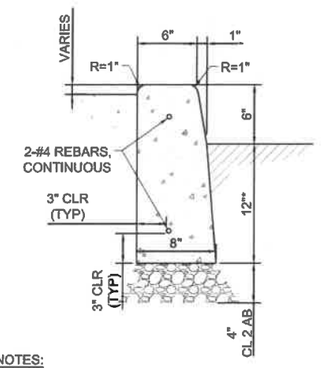
4 CONCRETE CURB & GUTTER AT DRIVEWAY APPROACH
CITY STANDARD DETAIL SI-103
NOT TO SCALE



5 VERTICAL CURB AND GUTTER W/ SIDEWALK
CITY STANDARD DETAIL SI-105
NOT TO SCALE



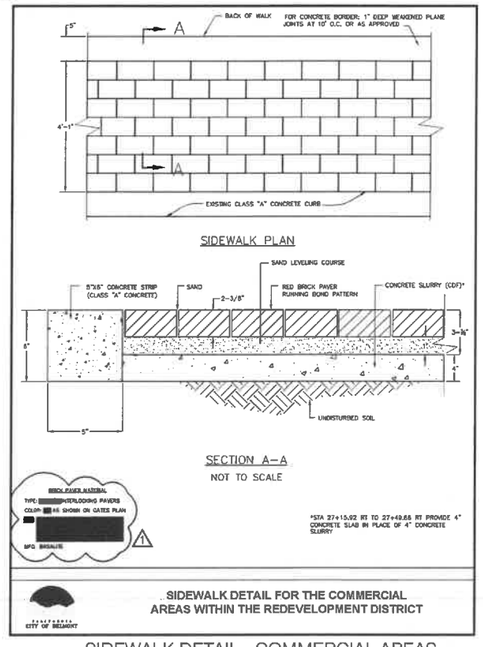
6 DRIVEWAY APPROACH
CITY STANDARD DETAIL SI-107
NOT TO SCALE



NOTES:

1. PLACE ½" ASPHALTIC FIBER EXPANSION JOINT AT RETURNS AND AT 20' INTERVALS.
2. CONCRETE SHALL BE 6-SACK, FC=3,000 psi.
3. CONTROL JOINTS SHALL BE 10' O.C.
4. WHERE VERTICAL CURB IS INSTALLED ADJACENT TO EXISTING PAVEMENT, CONTRACTOR SHALL REMOVE &REPLACE 1 FOOT OF STRUCTURAL SECTION TO CONSTRUCT & CONFORM TO NEW CURB. NEW PAVEMENT STRUCTURAL SECTION SHALL MATCH EXISTING SECTION.

7 VERTICAL CURB DETAIL
NOT TO SCALE



8 SIDEWALK DETAIL - COMMERCIAL AREAS
CITY STANDARD DETAIL SI-106a
NOT TO SCALE

No.	Revision	Date	By	Chkd
1	ADDENDUM 1	04-22-2019	SM	JP

Date: APRIL 22, 2019
Drawn By: PJB
Designed By: SM

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2
DETAILS

CITY OF BELMONT
BELMONT, CALIFORNIA

WILSEY HAM
Engineering, Surveying & Planning
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REGISTERED PROFESSIONAL ENGINEER
JEFFREY M. PETERS
C41385
CIVIL
STATE OF CALIFORNIA

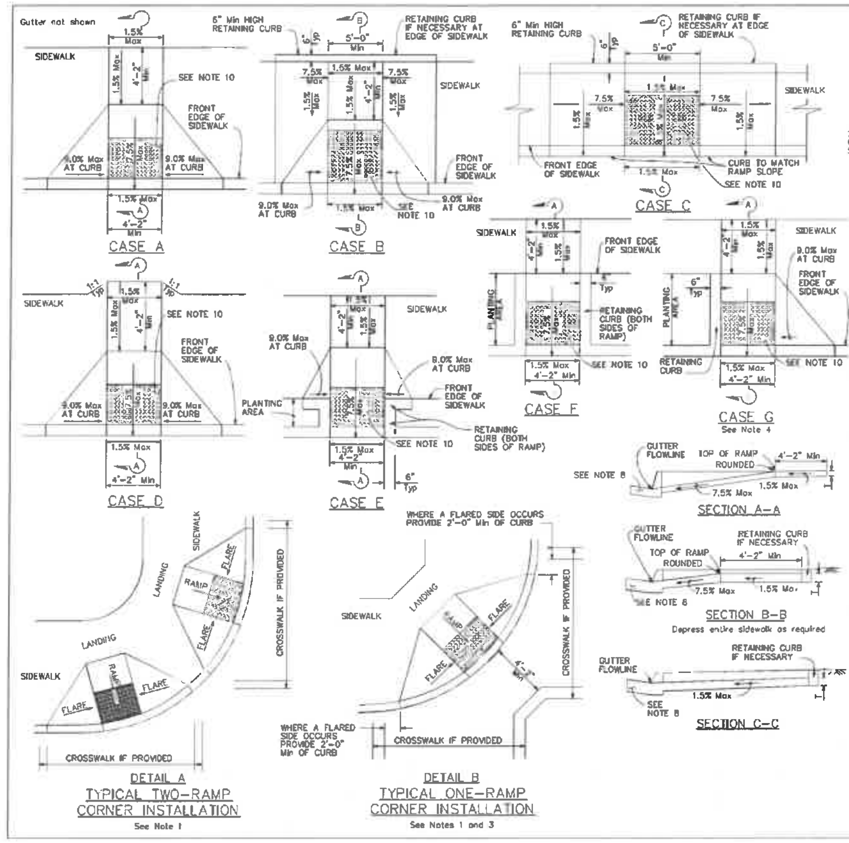
SCALE: AS SHOWN

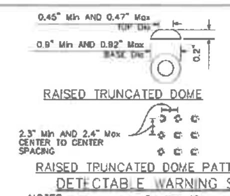
SHEET: 34 OF 43

File: H:\1120-TJKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\04-08 SECTIONS & DETAILS.dwg Plotted: 4-22-19 @ 08:33:57 AM By: emandalika

2018 STANDARD PLAN A88A

150



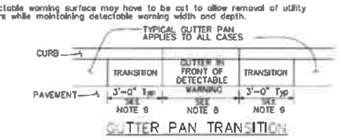


THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DETECTABLE WARNING SURFACE

NOTES: See Note 10

1. As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate. For specific site condition configuration, including the conform to existing sidewalk, see Project Plans.
2. If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B or Case C or may be widened as in Case D.
3. When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
4. As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
5. The ramp portion of the curb ramp is a typical rectangle, unless modified in the Project Plans.
6. Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
7. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
8. Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1V:20H (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
9. Transition gutter pan slope from 1" of depth for each 2'-0" of width to match typical gutter pan slope per Standard Plan A87A.
10. The detectable warning surface will be a rectangle as shown at back of curb, unless modified in the Project Plans. Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable warning surfaces shall extend the full width of the ramp except a maximum gap of 1 inch is allowed on each side of the ramp. Detectable warning surfaces shall conform to the requirements in the Standard Specifications.
11. Sidewalk and ramp thickness, "T", shall be 31/2" minimum.
12. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
13. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining detectable warning width and depth.

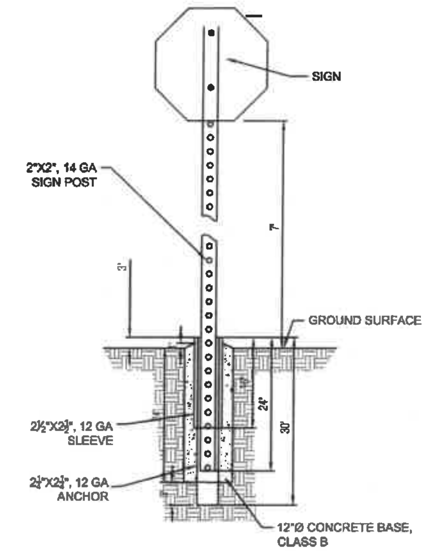


GUTTER PAN TRANSITION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

A88A

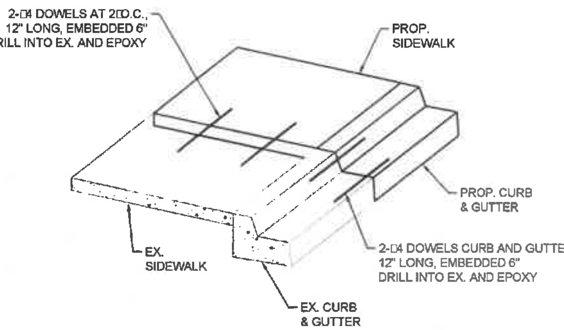
(9) CALTRANS STANDARD CURB RAMP
NOT TO SCALE



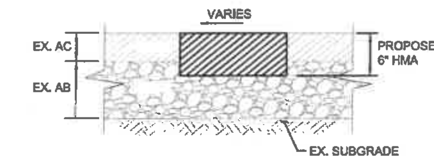
NOTES:

1. METAL POSTS SHALL BE TELESPAR SQUARE TUBING OR APPROVED EQUAL. SIGN POST MUST BE BREAKAWAY.
2. AT INSTALLATION COVER HOLES BELOW CONCRETE WITH TAPE TOO PREVENT CONCRETE FROM FALLING INTO SLEEVE AND ANCHOR.
3. SIGN HEIGHT SHALL BE 7' FROM BOTTOM OF SIGN TO THE GROUND SURFACE.
4. SIGNS SHALL BE INSTALLED AS SHOWN ON PLANS AND PROVIDE 48" CLEAR (36"MIN).
5. ALL SIGNAGE SHALL FOLLOW CITY OF BELMONT CLEARANCE AROUND SIGNS. CONTRCATOR SHALL BE RESPONSIBLE FOR ANY REQUIRED CLEARING AROUND SIGNAGE WITH COORDINATION FROM THE CITY.

(10) SIGN POST DETAIL
NOT TO SCALE



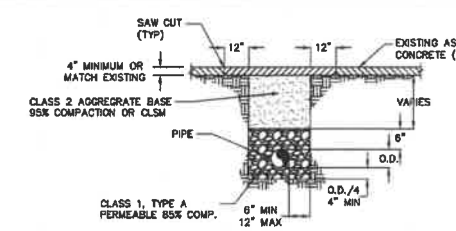
(11) DOWEL DETAIL
NOT TO SCALE



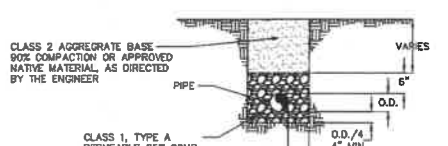
NOTES:

1. REMOVE AND DISPOSE THE TOP 6" OF THE ROAD SECTION.
2. THE 6" HMA SECTION SHALL CONTAIN ¾" MAX AGGREGATE.
3. EX. SUBGRADE SHALL BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED TO 95% RELATIVE DENSITY.

(12) DIGOUT REPAIR DETAIL
NOT TO SCALE



STREET AREAS



NOTE: FOR ROADWAY SHOULDERS OR GRAVEL ROADS BRING TRENCH BACKFILL UP TO ADJACENT GRADES.

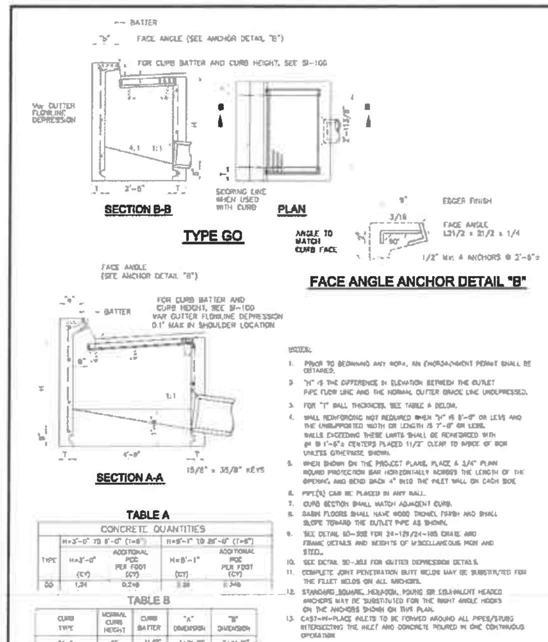
UNIMPROVED AREAS

NOTES:
1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT IS REQUIRED FOR WORK WITHIN A PUBLIC EASEMENT OR STREET/ RIGHT-OF-WAY
2. CONFORM WITH ALL FEDERAL OR STATE SAFETY REGULATIONS AND RECOMMENDATIONS INCLUDING TRENCH SHORING (LABOR CODE SECTION 6705) AND TRAFFIC CONTROL.
3. CONTROLLED LOW STRENGTH MATERIAL (CLSM) WITH COMPRESSIVE STRENGTH OF 100 PSI MAY BE USED WITH ENGINEER APPROVAL.

CITY OF BELMONT | TRENCH DETAILS | SI-109 N.T.S.
APPROVED BY: L. ALVAREZ | DATE: OCTOBER 2016 | SHEET: 1 OF 1

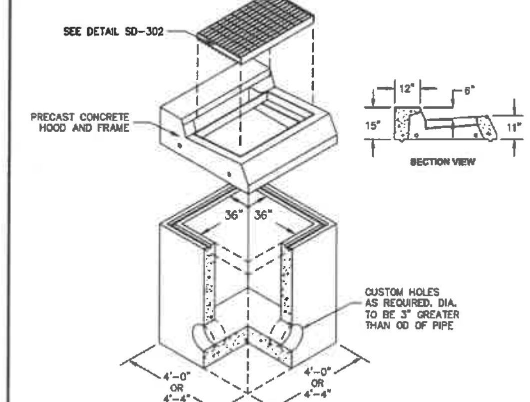
Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov

(13) TRENCH DETAILS
CITY STANDARD DETAIL SI-109
NOT TO SCALE



CITY OF BELMONT | TYPE GO CURB INLET | SD-300 N.T.S.
APPROVED BY: L. ALVAREZ | DATE: OCTOBER 2016 | SHEET: 1 OF 2

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov



NOTES:
1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. FOR BOX HEIGHT 8'-3" OR LESS WALL THICKNESS IS 6"
3. FOR HEIGHTS GREATER THAN 8'-3" WALL THICKNESS IS 8"
4. 8" BASE THICKNESS
5. DESIGN LOAD: H-20 TRAFFIC

CITY OF BELMONT | TYPE GO CURB INLET FOR 6" CURB | SD-300 N.T.S.
APPROVED BY: L. ALVAREZ | DATE: NOVEMBER 2016 | SHEET: 2 OF 2

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov

(14) TYPE GO CURB INLET
CITY STANDARD DETAIL SD-300
NOT TO SCALE

File: H:\1020-TJKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\34-38 SECTIONS & DETAILS.dwg Plotted: 5-29-19 @ 04:47:55 PM By: pbusinger

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REGISTERED PROFESSIONAL ENGINEER SETH A. WARREN 83281 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS REVISIONS	05-16-2019	SM	JP

Date: MAY 15, 2019
Drawn By: PJB
Designed By: SM

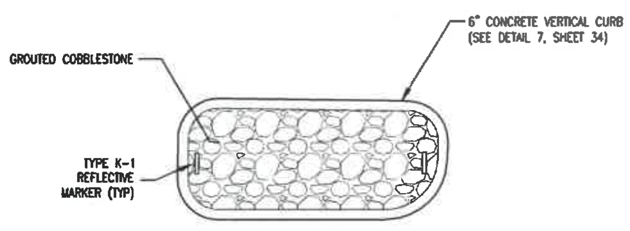
SECTION & DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

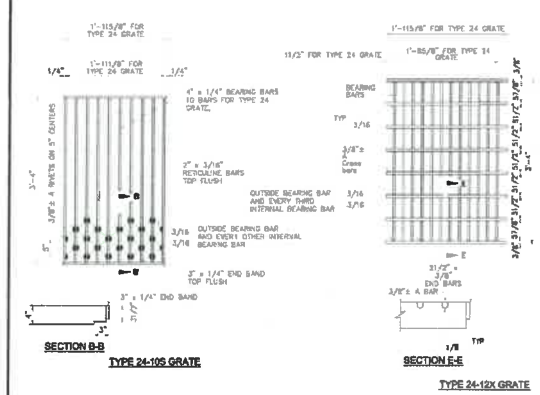
SCALE: AS SHOWN

SHEET: 35 OF 43



NOTE: DIMENSIONS VARY. SEE IMPROVEMENT PLAN FOR LINE & CURVE TABLE.

16 MEDIAN ISLAND DETAIL
NOT TO SCALE

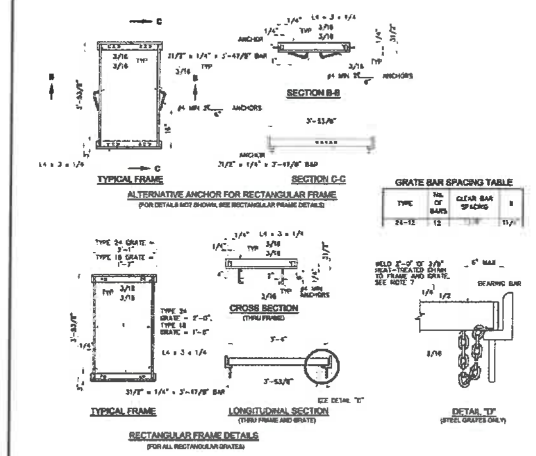


NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. WHEN ALTERNATIVE GRATES ARE ALLOWED – FINAL PAY BASED ON ALTERNATIVE WITH THE LESSER WEIGHT.
3. USE FRAME SHOWN ON STANDARD DETAILS SD-300/301 AS APPROPRIATE.
4. WHEN TYPE 24-10S OR 24-12X GRATES ARE USED WITH ODD INLETS A 1/4" x 31/2" x 3'-47/8" STEEL BAR SHALL BE WELDED ACROSS THE CENTER OF INLET FRAME TO SEPARATE THE INDIVIDUAL GRATES.
5. BEARING BARS TO BE 31/2" x 3/8" BARS ON 17/8" CENTERS.
6. 12 BARS FOR TYPE 24 GRATE
7. WEIGHT OF TYPE 24 GRATE = 192 LBS.
8. 3/8"± A CROSS BARS MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTROFORGED TO BEARING BARS.
9. WEIGHT OF TYPE 24 GRATE = 182 LBS.

CITY OF BELMONT	GRATE DETAILS	SD-302
	APPROVED BY: L. ALVAREZ DATE: NOVEMBER 2016	N.T.S. SHEET: 1 OF 2

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov



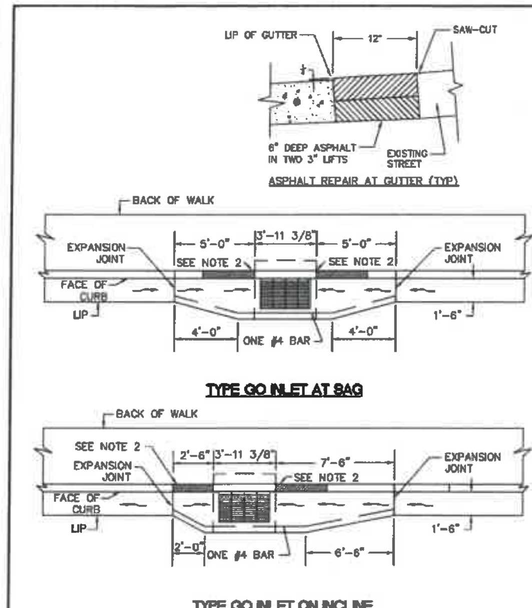
NOTES:

1. GRATE TYPE NUMBERS REFER TO APPROXIMATE WIDTH OF GRATE IN INCHES AND NUMBERS OF BARS, RESPECTIVELY.
2. ROUNDED TOP OF BARS OPTIONAL ON ALL GRATES.
3. PIPE INLETS WITH A GRATE SHALL BE PLACED SO THAT BARS PARALLEL DIRECTION OF PRINCIPLE SURFACE FLOW.
4. COMPLETE JOINT PENETRATION BUTT WELDS MAY BE SUBSTITUTED FOR THE FILLET WELDS ON ALL ANCHORS.
5. STANDARD SQUARE, HEXAGON, ROUND OR EQUIVALENT HEADED ANCHORS MAY BE SUBSTITUTED FOR THE RIGHT ANGLE HOOKS ON THE ANCHORS SHOWN ON THIS PLAN.
6. GRATE AND FRAME WEIGHTS ARE BASED ON WELDS GRATES (WEIGHTS OF FACE ANGLES, STEPS, PROTECTION BARS, ETC. ARE NOT INCLUDED.
7. CONNECT CHANGE TO GRATE AND FRAME ONLY AT LOCATIONS SHOWN ON THE PLANS. WHEN CHAIN IS REQUIRED DO NOT USE CAST DUCTILE IRON GRATES.

CITY OF BELMONT	GRATE DETAILS	SD-302
	APPROVED BY: L. ALVAREZ DATE: SEPT 2016	N.T.S. SHEET: 2 OF 2

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov

17 GRATE DETAILS
CITY STANDARD DETAIL SD-302
NOT TO SCALE



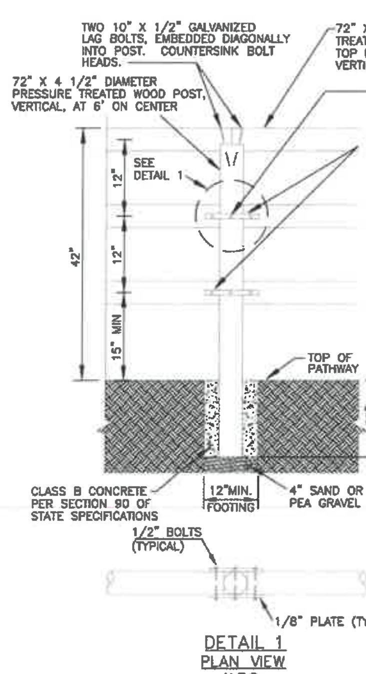
NOTES:

1. PRECAST CONCRETE STRUCTURES ARE ACCEPTABLE. US CONCRETE OR APPROVED EQUAL.
2. TRANSITION FROM CURB & GUTTER TO ROLLED CURB WITHIN A MINIMUM OF 30"

CITY OF BELMONT	TYPE GO INLET APRON	SD-303
	APPROVED BY: L. ALVAREZ DATE: OCTOBER 2016	N.T.S. SHEET: 1 OF 1

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov

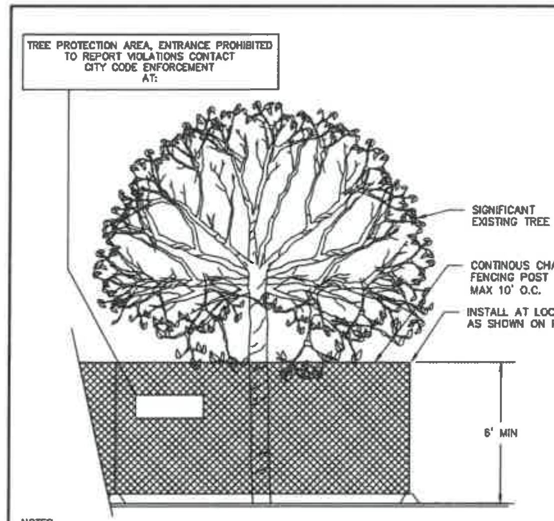
18 TYPE GO INLET APRON
CITY STANDARD DETAIL SD-303
NOT TO SCALE



NOTES:

1. LOCATION OF PATHWAY RELATIVE TO FACE OF HANDRAIL TO BE APPROVED BY THE CITY ENGINEER.
2. GALVANIZING FOR BOLTS AND PLATES SHALL BE PER SECTION 75-1.05 OF STATE STANDARD SPECIFICATIONS.
3. WOOD POSTS SHALL BE PRESSURE TREATED DOUG FIR OR PINE, OR EQUAL AS APPROVED BY THE CITY ENGINEER. ANY SURFACES WHICH HAVE BEEN CUT OR DRILLED SHALL BE TREATED WITH PRESERVATIVE TREATMENT.

19 PATHWAY HANDRAIL
NOT TO SCALE



NOTES:

1. PRIOR TO BEGINNING ANY WORK, AN ENCROACHMENT PERMIT SHALL BE OBTAINED.
2. MINIMUM SIX(6) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE(S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.
3. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION FOR ROOTSOVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING AND COVERED WITH SOIL AS SOON AS POSSIBLE.
4. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.
5. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE.

CITY OF BELMONT	TREE PROTECTION FENCING	ST-503
	APPROVED BY: L. ALVAREZ DATE: NOVEMBER 2016	N.T.S. SHEET: 1 OF 1

Standard Details – City of Belmont Public Works Department – 1 Twin Pines Lane, Suite 385, Belmont, CA 94002 – (650) 595-7425 – pworks@belmont.gov

20 TREE PROTECTION FENCING
CITY STANDARD DETAIL ST-503
NOT TO SCALE

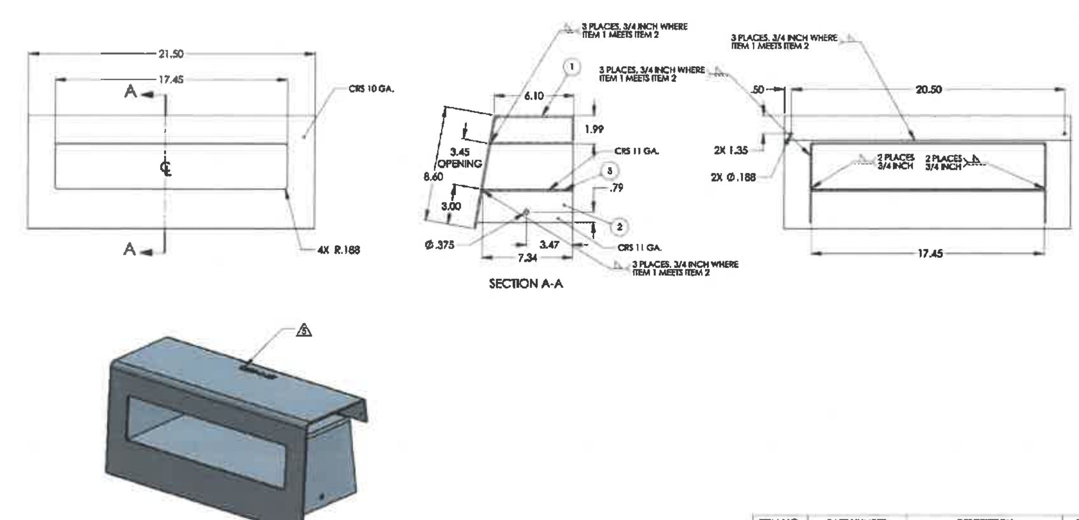
NOTES: UNLESS OTHERWISE SPECIFIED

1. MATERIAL: NOTED.
2. FINISH: AFTER ASSEMBLY.
3. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

4. INSTALLATION: FOR 6 INCH CURB, INVERT OF CURB-O-LET TO BE 1/2 INCH ABOVE FLOW LINE ± 1/4 INCH, FOR 8 INCH CURBS BOTTOM OF CURB-O-LET TO BE INBEDDED IN CONCRETE ± 1/4 INCH.

5. STAMP COMPANY NAME IN 1/2" HIGH LETTERS APPROXIMATELY WHERE SHOWN .02-.04 DEEP.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	RELEASE FOR PRODUCTION		
B	CHANGED OPENING DIMS	09/21/16	
C	CLARIFIED DIMENSIONS	06-13-17	
D	ADDED CITY APPROVAL	[illegible]	



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TCD317-1NS	COVER	1
2	TCD317-2NS	BRACKET	1
3	TCD317-3NS	PLATE	1

TITLE: TCD317-NS ASSEMBLY
SIZE C DWG. NO. TCD317-NS REV D
SCALE: 1:4 SHEET 1 OF 1

R&D METAL FABRICATORS 5250 RANCHO ROAD HUNTINTON BEACH, CA 714-891-4878	ATLAS GALVANIZING CO. 2639 LEONIS BLVD. VERNON, CA 323-587-6247

21 CURB-O-LET 6" TCD317-NS ASSEMBLY
NOT TO SCALE

WILSEY HAM
Engineering, Surveying & Planning
3130 La Selva Street, Suite 100
San Mateo, CA 94403
650.349.2151
wilseyham.com

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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

REGISTERED PROFESSIONAL ENGINEER SETH A. WARREN 83281 CIVIL STATE OF CALIFORNIA

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-NMC-0230 COMMENTS	05-15-2019	SM	JP
2	CALTRANS 0419-NMC-1276 COMMENTS	06-21-2019	SM	SAW

Date: JUNE 27, 2019
Drawn By: PJB
Designed By: SM

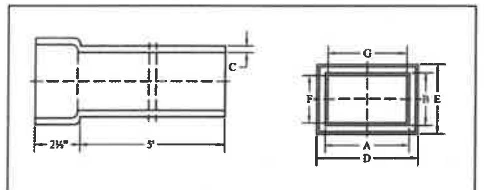
DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

SCALE: AS SHOWN

File: H:\1020-TJKM\1020-001 TJKM Belmont Ralston Ave Corridor Improvements Segment 1\Engineering\Construction Drawings\34-38 SECTIONS & DETAILS.dwg Plotted: 6-25-19 @ 04:11:06 PM By: smandalika



HUB PIPE DETAIL

PRODUCT SPECIFICATION - HUB PIPE											
PRODUCT LIST				PRODUCT DIMENSIONS							
MODEL	DIMENSIONS	ROUND EQUIV.	ROUND TRANSVERSE AREA (SQ. IN.)	A	B	C	D	E	F	G	
CP-SP305H	3"x5"x5'	4"	12.724	5.269"	3.269"	10 GA.	5.5"	3.5"	3"	5"	
CP-SP308H	3"x8"x5'	5"	20.040	8.269"	3.269"	10 GA.	8.5"	3.5"	3"	8"	
CP-SP312H	3"x12"x5'	6"	28.886	12.269"	3.269"	10 GA.	12.5"	3.5"	3"	12"	
CP-SP317H	3"x17"x5'	8"	50.014	17.269"	3.269"	10 GA.	17.50"	3.5"	3"	17"	
CP-SP414H	4"x14"x5'	8"	50.014	14.269"	4.269"	10 GA.	14.50"	4.5"	4"	14"	
CP-SP327H	3"x27"x5'	10"	78.814	27.269"	3.269"	10 GA.	27.50"	3.5"	3"	27"	
CP-SP422H	4"x22"x5'	10"	78.814	22.269	4.269"	10 GA.	22.50"	4.5"	4"	22"	

MATERIAL: 10 GAUGE GALVANIZED A653 G90 MEETS ASTM A-653. TENSILE STRENGTH 50,000.0 YIELD 36,000.
ALL WELDS WILL BE SPRAYED, ROLLED OR BRUSHED WITH GALVANIZED #90 COATING.
RECTANGULAR CONNECTION: MASTIC, CAULKING, EPOXY BINDING OR OTHER APPROVED METHOD.
ROUND CONNECTION: CAST IRON/PLASTIC PIPE CONNECTION USE CAST IRON OR PLASTIC TO STEEL COUPLINGS.

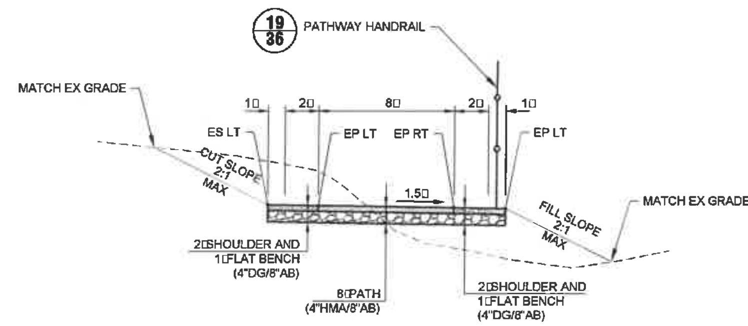
REV | ZONE | DATE | REVISION DESCRIPTION | BY | CK'D

Curb-O-Let™
Thru The Curb Drain

RECTANGULAR STEEL PIPE AND FITTINGS.
HUB PIPE

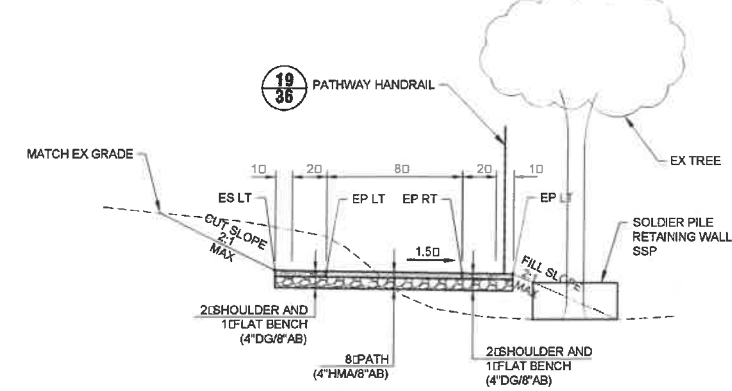
22 CURB-O-LET 6" CP-SP312H BOX CULVERT
NOT TO SCALE

2



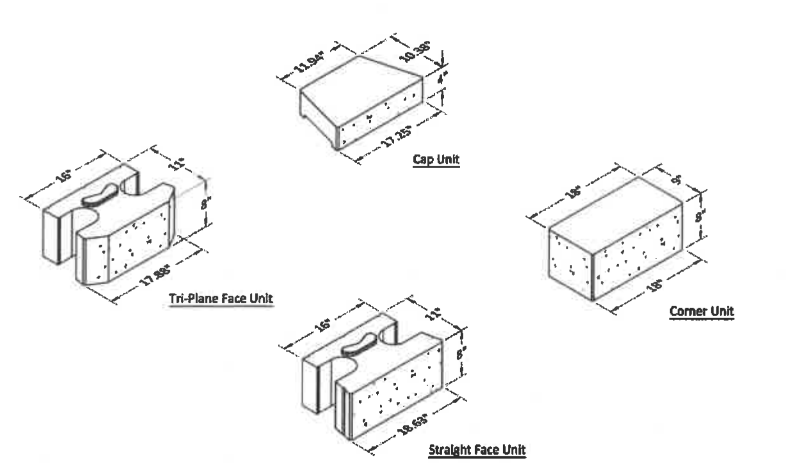
NOTES:
1. FILL SLOPES SHALL BE KEYED IN AT 3 HORI: 1 VERT.
2. FILL MATERIAL SHALL BE COMPACTED TO 90 RELATIVE MAXIMUM DENSITY UP TO WITHIN 18" OF FINISHED GRADE. UPPER 18" SHALL BE COMPACTED TO 95 RELATIVE MAXIMUM DENSITY.
3. SUBGRADE SHALL BE SCARIFIED 3" AND MOISTURE TREATED PRIOR TO PLACEMENT OF FILL.

A PARK PATHWAY SECTION - TYPICAL
NOT TO SCALE



NOTES:
1. FILL SLOPES SHALL BE KEYED IN AT 3 HORI: 1 VERT.
2. FILL MATERIAL SHALL BE COMPACTED TO 90 RELATIVE MAXIMUM DENSITY UP TO WITHIN 18" OF FINISHED GRADE. UPPER 18" SHALL BE COMPACTED TO 95 RELATIVE MAXIMUM DENSITY.
3. SUBGRADE SHALL BE SCARIFIED 3" AND MOISTURE TREATED PRIOR TO PLACEMENT OF FILL.

B PARK PATHWAY SECTION - WITH RETAINING WALL
NOT TO SCALE



* Dimensions May Vary by Region

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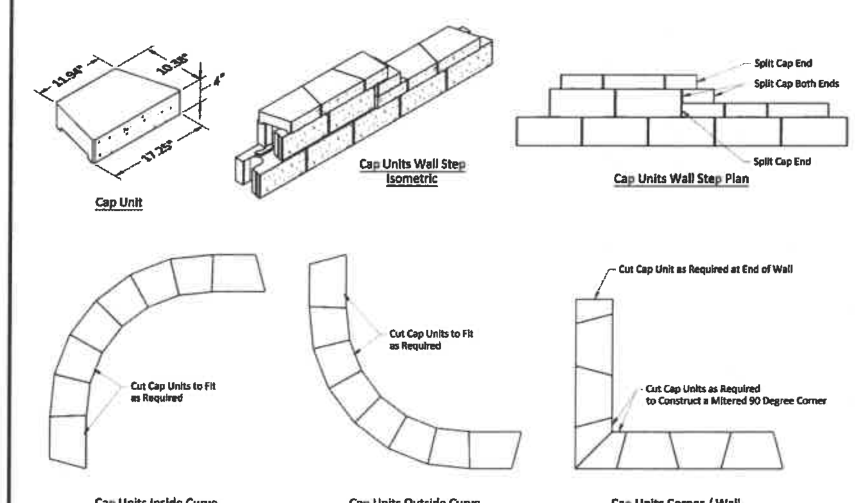
Final project specific designs shall be prepared by a licensed professional engineer.

KEYSTONE

Project: Valera Details | Title: 8" Single Unit Details
Designed By: RKM | Checked By: CDM | Scale: No Scale | Revision: | Date: 12-19-17 | Drawing No: 1 of 11



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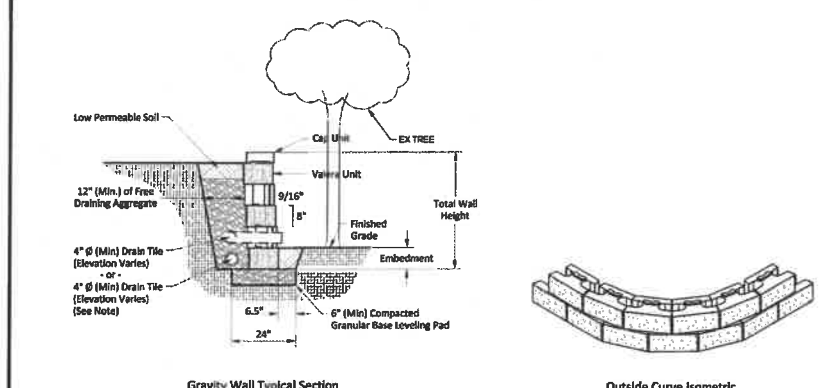
KEYSTONE

Project: Valera Details | Title: Cap Unit Details
Designed By: RKM | Checked By: CDM | Scale: No Scale | Revision: | Date: 12-19-17 | Drawing No: 2 of 11



Note:
Drain should be at bottom of wall when possible.
Utilize raised drain location when bottom of wall drainage is not possible.

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KEYSTONE

Project: Valera Details | Title: Gravity Wall Details
Designed By: RKM | Checked By: CDM | Scale: No Scale | Revision: | Date: 12-19-17 | Drawing No: 3 of 11

23 TREE WELL DETAILS
NOT TO SCALE

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2	CALTRANS 0419-NMC-1276 COMMENTS	06-21-2019	SM	SAW

Date: JUNE 27, 2019
Drawn By: PJB
Designed By: SM

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BELMONT, CALIFORNIA

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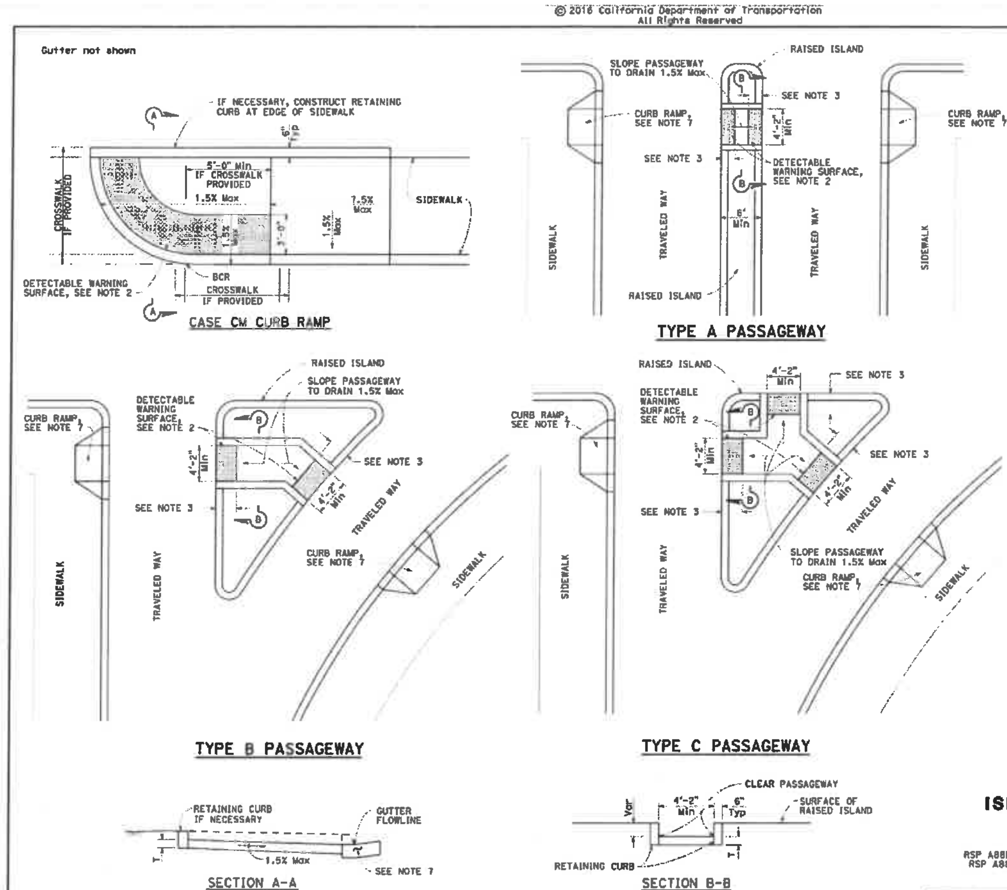
REGISTERED PROFESSIONAL ENGINEER
SETH A. WARREN
83281
CIVIL
STATE OF CALIFORNIA

SCALE: AS SHOWN



July 15, 2016

TO ACCOMPANY PLANS DATED ______

NOTES:

1. Sidewalk, ramp and passageway thickness, "T", shall be 3½" minimum.
2. For details of detectable warning surfaces, see Revised Standard Plan RSP A88A.
3. Where an island passageway length is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width and 2'-0" depth of the passageway length. Where an island passageway length is greater than or equal to 8'-0", each detectable warning surface shall extend the full width and 3'-0" depth of the passageway length. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide island passageway.
4. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.
5. Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
6. Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.
7. For additional curb ramp details, see Revised Standard Plan RSP A88A.

2010 REVISED STANDARD PLAN RSP A88B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

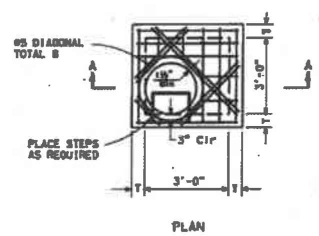
CURB RAMP AND ISLAND PASSAGEWAY DETAILS

NO SCALE

RSP A88B DATED JULY 15, 2016 SUPERSEDES RSP A88B DATED JULY 3, 2015, RSP A88B DATED MARCH 21, 2014 AND RSP A88B DATED JULY 19, 2013 AND STANDARD PLAN A88B DATED MAY 20, 2011 - PAGE 122 OF THE STANDARD PLANS BOOK DATED 2010.

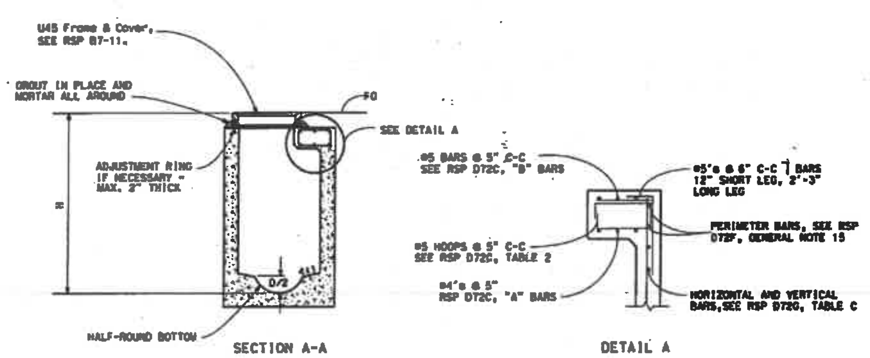
REVISED STANDARD PLAN RSP A88B

(24) CALTRANS STANDARD - CURB RAMP AND ISLAND PASSAGEWAY DETAILS
NOT TO SCALE

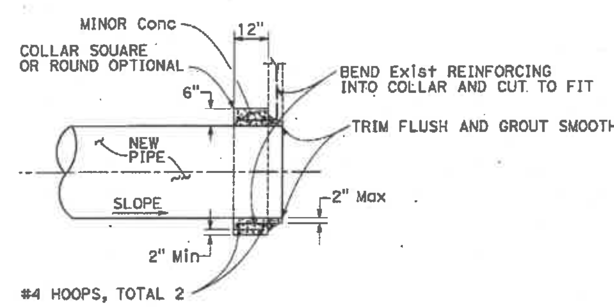


NOTES:

1. CIP SHOWN, PC SIMILAR.
2. FOR CIP G2 INLET DETAILS NOT SHOW, SEE RSP D72B, RSP D72C, RSP D72F, AND RSP D72G.
3. FOR PC G2 INLET DETAILS NOT SHOWN, SEE RSP D73B, RSP D73C, RSP D73F, AND RSP D73G.



(25) CALTRANS STANDARD DETAIL MODIFY INLET TO MANHOLE
NOT TO SCALE

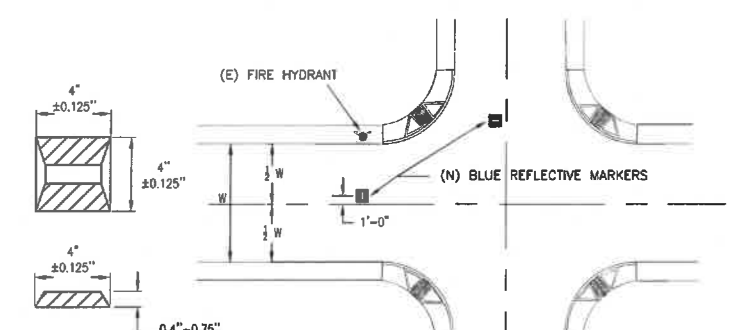


PIPE CONNECTION TO EXISTING INLET

NOTES:

1. CUT REINFORCEMENT ON ALTERNATE SIDES AND BEND INTO COLLAR.
2. IF THERE ARE NO Exist REINFORCING BARS, THEN USE 6 #4 DOWELS, SPACED EVENLY AROUND NEW PIPE, AND DRILL AND GROUT INTO Exist INLET WALLS 6".

(26) CONNECTION TO EX STORM DRAIN INLET
NOT TO SCALE



NOTE:

1. MINIMUM PROJECTED AREA OF REFLECTIVE FACE= 1.0 SQ.-INCH REFLECTIVE.
2. MARKERS NEED NOT BE RECTANGULAR LOCATE 1' OFF THE CENTER LINE TOWARDS THE FIRE HYDRANT.
3. TO BE INSTALLED AT EACH HYDRANT LOCATION--TYPICAL

(27) BLUE HYDRANT MARKER DETAIL
NOT TO SCALE

No.	Revision	Date	By	Chkd
1	CALTRANS 0419-NMC-0230 COMMENTS	05-15-2019	SM	JP
2	CALTRANS 0419-NMC-1278 COMMENTS	08-21-2019	SM	SAW

Date: JUNE 27, 2019
Drawn By: PJB
Designed By: SM

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BELMONT, CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER SETH A. WARREN 83281 CIVIL STATE OF CALIFORNIA

SCALE: AS SHOWN

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GENERAL

1. General notes and typical details apply to all structural features, unless otherwise indicated.
2. If certain features are not fully shown or called out on the drawings or in the specifications, their construction shall be of the same character as for similar conditions.
3. Specifications, codes and standards noted in the contract documents shall be of the latest edition, unless otherwise noted.
4. Dimensions shall not be scaled off of the drawings.
5. All work shall conform to minimum standards of the 2013 California Building Code, of any codes listed in the drawings or specifications and of any regulating agencies which have authority over any portion of the work, including the California Health and Safety Code.
6. Prior to submitting shop drawings and product data, the Contractor shall verify that the submittals meet the requirements of the drawings and specifications. The Contractor shall specifically note any exceptions to these requirements with the submittal.
7. The Contractor shall maintain a continuous fire watch, with extinguishing equipment immediately available during welding, cutting or burning near combustible materials.
8. Openings, pockets, etc. shall not be placed in structural members unless specifically detailed on the structural drawings. Notify the Structural Engineer when work requires openings, pockets, etc. in structural members not shown on the structural drawings.
9. The Contractor shall be responsible for coordinating the work of all trades and shall check all dimensions and holes and openings required in structural members. All discrepancies shall be called to the attention of the Architect/Engineer and shall be resolved before proceeding with the work.
10. Construction materials shall be spread out if placed on framed floors or roofs. Load shall not exceed the design live load per square foot. Provide adequate shoring where overload is anticipated.

DESIGN DATA

1. Code: 2016 California Building Code.
2. Earthquake Design Data:

Seismic Importance Factor:		1.0
Mapped Spectral Response		
	S_S:	1.89 g
	S_1:	0.88 g
Site Class:		D
Spectral Response Coefficients		
	S_{DS}:	1.26 g
	S_{D1}:	0.88 g
Seismic Design Category:		E

NEW CONSTRUCTION

1. Non–structural features not fully shown or noted on the structural drawings may include but are not limited to:

   A. Architectural features
   - size and location of all door and window openings
   - size and location of all non–bearing partitions
   - size and location of all concrete curbs, floor drains, slopes and depressed areas
   - changes in level, chamfers, grooves, inserts, etc.
   - size and location of all floor and roof openings
   - stair framing and details

   B. Mechanical, plumbing and electrical features
   - pipe runs, sleeves, hangers, trenches, wall, roof and floor openings, etc.
   - electrical conduit runs, boxes, outlets in walls and slabs
   - anchorage and bracing for electrical, mechanical or plumbing equipment
   - anchor bolts for motor mounts
   - size and location of machine and equipment bases
2. The contract documents represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect life and property during construction. Such measures shall include, but are not limited to, bracing and shoring for loads due to construction equipment and materials. Observation visits to the site by the structural engineer shall not include inspection of the above items.
3. The lateral system of the structure is designed with lateral restraint at each level. Structural walls or frames are not laterally self supporting until the entire design lateral–restraint system is in place.
4. Water proofing details not shown. Contractor to provide pricing to waterproof around all penetrations throughout existing building envelope.

FOUNDATIONS

1. The retaing wall foundation design is based on the values provided in Tables 1610.1 and 1806.A.2 of the 2016 California Building Code for clay, sandy clay, silty clay.
2. The Contractor shall conform to the Specificationsregarding site preparation and foundation construction.
3. Foundation excavations shall be inspected and approved by the special inspector prior to placement of any reinforcing steel or concrete.
4. Foundation type: drilled piers.

   Design Values:

   Retaining Wall Design

Active Pressure	60 pcf
Live Load Surcharge	250 psf (ASCE 7 Table 4–1 for sidewalks, vehicular driveways, and yards subject to trucking)

   Drilled Pier Design

Lateral Passive Pressure	100 pcf
5. The Contractor shall be solely responsible for all excavation procedures, including lagging, shoring and protection of adjacent property, structures, streets and utilities in accordance with the local building department.
6. Backfill at walls shall not be placed until a minimum of 7 days after the completion of the walls and shall not be placed until after completed inspection of damp–proofing.

STRUCTURAL STEEL & MISC. METALS

1. Fabrication and erection of structural steel shall be in accordance with the "Code of Standard Practice for Steel Buildings and Bridges" AISC 303–10.
2. Materials:

A. W shapes:	ASTM A992 (F_y = 50 ksi)
B. Channels & angles:	ASTM A36 (F_y = 36 ksi)
C. All other shapes & plates:	ASTM A572 grade 50 u.o.n.
3. Bolts, unless otherwise noted on drawings:

A. High–strength bolts:	ASTM A325–N
B. Machine bolts:	ASTM A307
C. Anchor rods:	ASTM F1554 grade 55 with supplementary requirement S1.
4. Joint type for bolted connections shall be snug–tightened (ST), unless otherwise noted as pretensioned (PT) or slip–critical (SC).
5. Faying surface for slip–critical (SC) bolts shall be Class A, unless otherwise noted, with bolt slip considered at the factored load level.
6. Bolt holes in steel shall be 1/16 inch larger diameter than nominal size of bolt used, unless otherwise noted.
7. For bolted connections, provide 1½ inch edge and end distance, unless otherwise noted.
8. All welds shall be prequalified or qualified by test in conformance with the "Structural Welding Code – Steel" (AWS D1.1–10) of the American Welding Society. Submit Welding Procedure Specifications for approval prior to performing work. Submit Procedure Qualification Reports with Welding Procedure Specifications for welds qualified by test.
9. Minimum tensile strength of weld metal shall be 70 ksi typical, unless otherwise noted. Welding electrodes shall be as recommended by their manufacturer for the position and other conditions of actual use.
10. Weld symbols shown on the drawings do not necessarily differentiate between shop weld and field welds. When field welds are necessary due to construction procedure or sequence, welds shall be provided and be inspected per specifications. All welds shown as field welds shall be done in field as indicated.
11. All structural steel surfaces are to be hot dip galvanized after fabrication. Touch up damaged or cut hot dip galvanized areas per specifications.
12. No penetrations through structural steel members are allowed except as indicated on the structural drawings.

CONCRETE & REINFORCING STEEL

1. All concrete shall be ready–mix in accordance with ASTM C94.
2. Cement: ASTM C150 Type II.
3. Aggregate: ASTM C33.
4. Non–shrink Grout: ASTM C1107, premixed, non–staining, non–shrink grout.
5. Grout or concrete containing more than 0.1 percent of soluble chloride shall not be used.
6. Mixes are to be reviewed by owner's testing lab and submitted to the Architect/Engineer for approval. Do not cast concrete without approval by Architect/Engineer.

Concrete	Strength	Max. Agg. Size	Max. W/C Ratio	Air Content
Foundations	4000 psi	1½"	0.45	1½% ± 1½%
Lagging	4000 psi	¾"	0.45	1½% ± 1½%
Other	3000 psi	1"		

   See specifications for additional requirements. All concrete shall be hard rock aggregate, regular–weight concrete, 145 pcf, unless otherwise noted.
7. Inserts: All items to be cast in concrete, such as reinforcing dowels, bolts, anchors, pipes, sleeves, etc., shall be securely positioned in the forms before placing the concrete.
8. Pipes and electrical conduits shall not be embedded in structural concrete, except where specifically approved by the structural engineer.
9. Provide sleeves for plumbing and electrical openings in concrete before placing. Do not cut any reinforcing which may interfere. Coring in concrete is not permitted except as shown. Notify the Architect/Engineer in advance of conditions that are not shown on the drawings.
10. Construction joints: Provide as detailed on drawings. Expose clean coarse aggregate solidly embedded in mortar matrix by sandblasting, bushhammer, or other approved method. Location of construction joints shall be approved by the Architect/Engineer.
11. Dry pack or place non–shrink grout under base plates, sill plates, etc., as required for full bearing.
12. Reinforcing steel: ASTM A615 Grade 60. ASTM A706 where welded or otherwise indicated.
13. Welded wire fabric: ASTM A1064 (flat sheets only).
14. All reinforcement shall be continuous. Stagger splices where possible. Laps shall be per typical details, unless otherwise noted.
15. Headed terminators shall be HRC 100–Series T–heads (ICC ER–5292), HRC 555 T–heads (IAPMO ER–0177) or Lenton Terminators (IAPMO ER–0188).
16. Mechanical couplers shall be Lenton Taper Threaded Rebar Splices (ICC ER–3967) or Bar–Lock "L" Series Couplers (ICC ER–2495).
17. Welded couplers shall be Lenton CJ3 weldable half couplers (IAPMO ER–0129).
18. Minimum clear concrete cover for reinforcement, unless otherwise noted:

   A. Mild Reinforced Concrete:

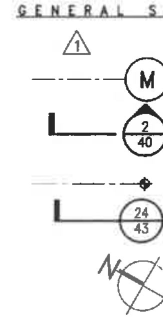
Cast against earth:	3 inches
Cast in forms and exposed to earth or weather:	
#6 bar and larger:	2 inches
#5 bar and smaller:	1½ inches
Not exposed to earth or weather:	
Slabs, walls, and joists:	1 inch
Beams, girders, and columns (to ties):	1½ inches

   Clearances are to closest reinforcement.

ABBREVIATIONS

&	And
@	At
A.B.	Anchor Bolt
ACI	American Concrete Institute
ADD'L	Additional
AESS	Architectural Exposed Structural Steel
AISC	American Institute of Steel Construction
ALT.	Alternate
APPROX.	Approximate
ARCH.	Architect
ASD	Allowable Strength Design
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Assoc.
AWS	American Welding Society
BLK'G	Blocking
BM.	Beam
B.N.	Boundary Nail
BOCA	Building Officials and Code Administrators International, Inc.
BOT.	Bottom
BRG.	Bearing
B.S.	Both Sides
BTWN.	Between
C	Camber
CBC	California Building Code
C.C.	Center to Center
CCR	California Code of Regulations
C.J.	Control Joint
CIDH	Cast–in–drilled–hole
C.I.P.	Cast–in–place
C.L., ℄	Center Line
CLG.	Ceiling
CLR.	Clear
CMU	Concrete Masonry Unit
COL.	Column
CONC.	Concrete
CONN.	Connection
CONT.	Continuous
CJP	Complete Joint Penetration
CSK.	Countersink
CTBR.	Counterbore
CTR.	Center
DBA	Deformed Bar Anchor
DBL.	Double
DC	Demand Critical (Weld)
DET., DTL.	Detail
DF	Douglas Fir
DIA.,ø	Diameter
DIAG.	Diagonal
DL	Dead Load
DN.	Down
DO.	Ditto
DSA	Division of the State Architect
DWG(S).	Drawing(s)
(E)	Existing
EA.	Each
E.A.	Each Face
E.J.	Expansion Joint
ELEV.,EL.	Elevation
EMB.,EMBED.	Embedment
E.N.	Edge Nail
EQ.	Equal
EQUIP.	Equipment
E.S.	Each Side
E.W.	Each Way
FDN.	Foundation
F.F.	Finish Floor
F.G.	Finish Grade
FIN.	Finish
FLR.	Floor
F.O.C.	Face of Concrete
F.O.M.	Face of Masonry
F.O.S.	Face of Stud
FRMG.	Framing
FRP	Fiber Reinforced Polymer
F.S.	Far Side
FT.	Foot, Feet
FTG.	Footing
GA.	Gauge
GALV.	Galvanized
G.L.	Grid Line
GLB	Glued Laminated Beam
GR.	Grade
HDG	Hot–dip Galvanized
HGR.	Hanger
HK.	Hook
HORIZ.	Horizontal
HSB	High Strength Bolt
HSS	Hollow Structural Section
HT.	Height
HW	Hot Water
IBC	International Building Code
ICC	International Code Council
IN.	Inch, Inches
INT.	Interior
INV.	Inverted
JST.	Joist
K	Kips
KSI	Kips per Square Inch
LBS.	Pounds
LL	Live Load
LLH	Long Leg Horizontal
LLV	Long Leg Vertical
LONG.	Longitudinal
LTWT.	Lightweight
LVL	Laminated Veneer Lumber
MAX.	Maximum
M.B.	Machine Bolt
MECH.	Mechanical
MFR.	Manufacturer
M.I.	Malleable Iron
MIL.	0.001 Inch
MIN.	Minimum
MISC.	Miscellaneous
(N)	New
NO.,#	Number
N.S.	Near Side
N.T.S.	Not to Scale
NWT.	Normal Weight
O.C.	On Center
O.D.	Outside Diameter
O.H.	Opposite Hand
OPNG.	Opening
OPP.	Opposite
OSHPD	Office of Statewide Health Planning and Development
P.A.F.	Powder–Actuated Fasteners
PART.	Partial
PCF	Pounds per Cubic Foot
PL.,℘	Plate
PLY.	Plywood
PP	Partial Penetration
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
P.T.	Pressure Treated
PW	Puddle Weld
PWJ	Plywood Web Joists
RAD.	Radius
R.D.	Roof Drain
REINF.	Reinforcing
REQ.	Required
RF.	Roof
RG	Refrigerated Glycol
R.O.	Rough Opening
RND.	Round
R.R.	Remove & Replace
RW	Refrigerated Water
S.A.D.	See Architectural Drawings
SCHED.	Schedule
SFBC	San Francisco Building Code
SFRS	Seismic Force Resisting System
SHT.	Sheet
SHTG.	Sheathing
SIM.	Similar
SLRS	Seismic Load Resisting System
S.M.D.	See Mechanical Drawings
S.O.G.	Slab on Grade
S.P.	Southern Pine
S.S.	Stainless Steel
STAGG'D.,STG.	Staggered
STD.	Standard
STIFF.	Stiffener
STL.	Steel
STRUCT.	Structural
SYMM.,SYM.	Symmetrical
T&B	Top and Bottom
T&G	Tongue & Groove
T.N.	Toe Nail
T.O.C.	Top of Concrete
T.O.S.	Top of Steel
T.O.W.	Top of Wall
TS	Tube Steel (Hollow Structural Section)
TYP.	Typical
U.O.N.	Unless Otherwise Noted
VERT.	Vertical
V.I.F., ±	Verify in Field
W/	With
W/O	Without
WCLIB	West Coast Lumber Inspection Bureau
W.P.	Work Point
WHS	Welded Headed Stud
WTS	Welded Threaded Stud
WWR	Welded Wire Reinforcing
WWPA	Western Wood Products Association

GENERAL SYMBOLS AND LEGEND



REVISION
GRIDLINE
BUILDING SECTION OR ELEVATION
WORK POINT, DATUM OR CONTROL POINT, FIN. FLR. ELEVATION, S.A.D.
DETAIL REFERENCE
PROJECT NORTH, S.A.D. FOR TRUE NORTH

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SAN MATEO COUNTY TRANSIT DISTRICT	(800) 660-4287

ISSUED FOR BID

REGISTERED PROFESSIONAL ENGINEER No. 4015 3/29/19

No.	Revision	Date	By	Chkd

Date: MARCH 28, 2019
Drawn By: CBG
Designed By: SPN

GENERAL NOTES & ABBREVIATIONS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

BELMONT, CALIFORNIA

SCALE: AS SHOWN

SHEET: 39 OF 43

STATEMENT OF STRUCTURAL OBSERVATION

Structural Observation is required by Chapter 17 of the California Building Code. Types of work listed below shall be observed during periodic site visits by the Structural Engineer. Contractor is responsible for notifying Structural Engineer 48 hours before work is ready for observation. Structural Observation does not constitute Special Inspection.

1. Concrete & Reinforcing Steel: Reinforcing steel, anchor rods, and other embedments shall be observed prior to placement of cast-in-place concrete and/or shotcrete elements.

2. Structural Steel: Steel elements and welded/bolted connections shall be observed.

STATEMENT OF SPECIAL INSPECTIONS

Tests and inspections indicated on the drawings are required for this project. The tests and inspections indicated here are the responsibilities of the Owner's Special Inspector, as required by Chapter 17 of the California Building Code.

1. The Special Inspector shall observe the work assigned for conformance with the approved design drawings and specifications.

2. The Special Inspector shall furnish inspection reports to the building official, the Architect/Engineer and other designated persons. All discrepancies shall be brought to the immediate attention of the Contractor for correction, then, if uncorrected, to the proper design authority and to the building official.

3. The Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and applicable standards of quality and workmanship of the CBC.

4. The contractor shall hold a pre-construction meeting involving the Architect, Structural Engineer and the Special Inspector in order to discuss the specific requirements of this project.

5. See project specifications for additional requirements.

EARTHWORK

1. Provide periodic inspection during excavation, grading and fill operations.
   - A. Observe height of lifts, moisture control and compaction.
   - B. Compaction verification tests according to ASTM D 1557. Frequency of tests shall be as deemed appropriate by the Geotechnical Engineer.
2. Provide periodic inspection prior to placement of concrete in cast-in-drilled-hole piles (drilled piers).
   - A. Confirm that marked pile locations are correct prior to drilling.
   - B. Observe condition of shaft sides and bottom.
   - C. Determine presence of free ground water.
   - D. Confirm proper use of drilling slurry or placement of casing, if required.
   - E. Observe placement and stabilization of reinforcing steel.
3. Provide continuous inspection during installation of driven piles.
   - A. Confirm correct pile type.
   - B. Confirm that marked pile locations are correct prior to driving.
   - C. Confirm hammer type and settings.
   - D. Record blow/foot driving resistance.
   - E. Record deviations from alignment, location, tip elevation.
4. Provide continuous inspection during installation of auger cast piles.
   - A. Confirm that marked pile locations are correct prior to drilling.
   - B. Confirm auger diameter.
   - C. Confirm tip depth or verify that drilling resistance criteria are satisfied.
   - D. Record grout volume for each 2 foot increment of pile length.
   - E. Confirm cutoff elevation.
   - F. Confirm placement of reinforcement spacers and and centralizers.
   - G. Observe placement of reinforcing steel.
5. Provide continuous inspection during pile testing.
   - A. Confirm test setup conforms to approved layout.
   - B. Observe recording of load-displacement indications.

CONCRETE

CONCRETE FORMWORK

1. Inspect erected formwork, shoring, and bracing to ensure that work is in accordance with formwork design, and to verify that supports, fastenings, wedges, ties, and items are secure.

CONCRETE REINFORCEMENT AND CAST-IN-PLACE ANCHORS

1. Reinforcing Steel Placement. Verify the following:
   - A. The reinforcing grade, size, number, location, and bend detailing are as shown on the drawings and are in acceptable condition.
   - B. All required devices have been properly installed to secure the reinforcement in place during the placement of concrete.
2. Installation of Mechanical Couplers on Reinforcing Bars. Verify the following:
   - A. The specific manufacturer and model of couplers have been approved for the application by the Architect/Engineer.
   - B. The couplers are installed according to the manufacturer's recommendations.
3. Installation of Headed Reinforcing Bars. Verify the following:
   - A. The specific manufacturer and type of headed reinforcing bars (with applicable product labeling) have been approved for the application by the Architect/Engineer.
   - B. The reinforcing bars are installed according to the manufacturer's recommendations.
4. Welding of Reinforcing Steel. Verify the following:
   - A. An appropriate approved welding procedure specification (WPS) is available at the site and that the welder has properly considered the process to be performed and the joint configuration.
   - B. The welder follows the essential variables of the WPS.
   - D. The materials and process comply with the applicable provisions of AWS D1.1 and AWS D1.4, and the project specifications.
   - E. Each welder has satisfactorily passed appropriate AWS qualification tests for the procedure to be performed, and if pertinent, has undergone recertification.
5. Installation of Cast-in-Place Anchors and other embedments. Verify the following:
   - A. The anchor diameter, length, type, grade, and depth of embedment into the concrete.
   - B. All required items have been properly installed to secure the embedded item during placement of concrete.

CAST-IN-PLACE CONCRETE

1. Placement of concrete. Verify the following:
   - A. The concrete delivered to the job has been prepared with the approved mix design appropriate for the application and is transported and placed within the time and under the conditions permitted by ASTM C94 and the project specifications.
   - B. The concrete is placed, consolidated, and finished as indicated on the drawings.
   - C. Test specimens are taken and cured as indicated in the project specifications.
2. Sampling of Fresh Concrete: ASTM C 172, except as modified for slump to comply with ASTM C 94.
   - A. Slump: ASTM C 143; one test at point of placement for each set of compression test specimens; additional tests when concrete consistency seems to have changed.
   - B. Concrete Temperature: ASTM C 1064; One test hourly when air temperature is 40 degrees Fahrenheit and below or 80 degrees Fahrenheit and above, and one test for each set of compressive-strength specimens.
   - C. Compression Test Specimens: ASTM C 31; One set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
   - D. Compressive-Strength Tests: ASTM C 39; One specimen shall be tested at 7 days, two specimens tested at 28 days, and one specimen retained for later testing if required.
   - E. Frequency of tests: A minimum of one set of cylinders shall be tested for any individual structure or each day's placement of a class of concrete exceeding 25 cu. yd. An additional set of cylinders shall be tested for each 100 cu. yd. of each class of concrete. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
3. Provide continuous inspection during concrete placement.
4. Verify maintenance of specified curing temperature and techniques.

STRUCTURAL STEEL

INSPECTION AND TESTING OF WELDED JOINTS

1. Inspection of welded connections shall include the following:
   - A. Verification that applicable and approved Welding Procedure Specifications (WPS) are available for all welds to be performed.
   - B. Verification that manufacturer certifications for filler metals and fluxes (welding consumables) are available for all welds to be performed.
   - C. Verification that base material and welding consumable selection conforms to the requirements of the approved WPS.
   - D. Verification that welders are appropriately qualified for the type, position, and class of weld to be performed.
   - E. Verification of the contractor's welder identification system.
   - F. Verification that weld filler materials handling, packaging, and storage are in accordance with the manufacturer's recommendations.
2. Continuous inspection of the following is required for the duration of welding procedures, except for single-pass fillet welds (throat less than 5/16") and for all welding performed in fabrication shops approved by the authority having jurisdiction.
   - A. Inspection of joint fit-up for groove welds shall include the following: joint preparation; dimensions including alignment, root opening, root face, and bevel; cleanliness of steel surfaces; tack weld quality and location; and backing type and fit (if applicable).
   - B. Inspection of joint fit-up for fillet welds shall include the following: dimensions including alignment and gaps at root; cleanliness of steel surfaces; and tack weld quality and location.
   - C. Inspection of configuration and finish of access holes.
   - D. Verification that welding is not performed over cracked tack welds.
   - E. Verification that welding is not performed in adverse environmental conditions.
   - F. Verification of applicable requirements of the approved WPS shall include the following: inspection of welding equipment settings; verification of travel speed, welding materials, shielding gas type and flow rate, application of preheat, interpass temperature control, proper position, and that intermixing of filler metals is avoided.
   - G. Verification of welding techniques implemented shall include the following: interpass and final cleaning, each pass is within the profile limitations, and each pass meets the applicable quality requirements.
3. Inspection of finished joints shall include the following:
   - A. Verification of the weld size, length, and location.
   - B. Verification that welds meet visual acceptance criteria including crack prohibition, weld/base-metal fusion, filling of craters, weld profile conformance, weld size, and undercuts and porosity within limits.
   - C. Inspection of any arc strikes, reinforcing or contouring fillet welds (if required), and approved repair activities performed.
   - D. Inspection of the web k-area for cracks within 3 inches of the weld when welding of doubler plates, continuity plates, or stiffeners in the k-area has been performed.
   - E. Verification that backing and weld tabs have been removed (if required).

OTHER STRUCTURAL STEEL INSPECTIONS

1. Inspection of anchor rods and other embedments supporting structural steel shall include verification of the following prior to the placement of concrete: diameter, grade, type, and length of the anchor rod or embedded item; and the extent or depth of embedment into the concrete.
2. Inspection of the fabricated steel or erected steel frame to confirm compliance with the details shown on the drawings shall, as a minimum, include the following: verification of member locations and proper application of joint details at each connection.
3. Inspection of steel members that are part of the seismic force resisting system (SFRS) shall include the following:
   - A. Verification of the contour, finish, and dimensional tolerances of any reduced beam section (RBS) flange cuts.
   - B. Verification that no holes or miscellaneous attachments occur within the member protected zones as identified on the drawings.

No.	Revision	Date	By	Chkd

Date: MARCH 29, 2019
Drawn By: CBG
Designed By: SFN

SPECIAL INSPECTION & OBSERVATION

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

ISSUED FOR BID

REGISTERED PROFESSIONAL ENGINEER — No. 4015 — 3/29/19 — STATE OF CALIFORNIA

SCALE: AS SHOWN

SHEET: 40 OF 43

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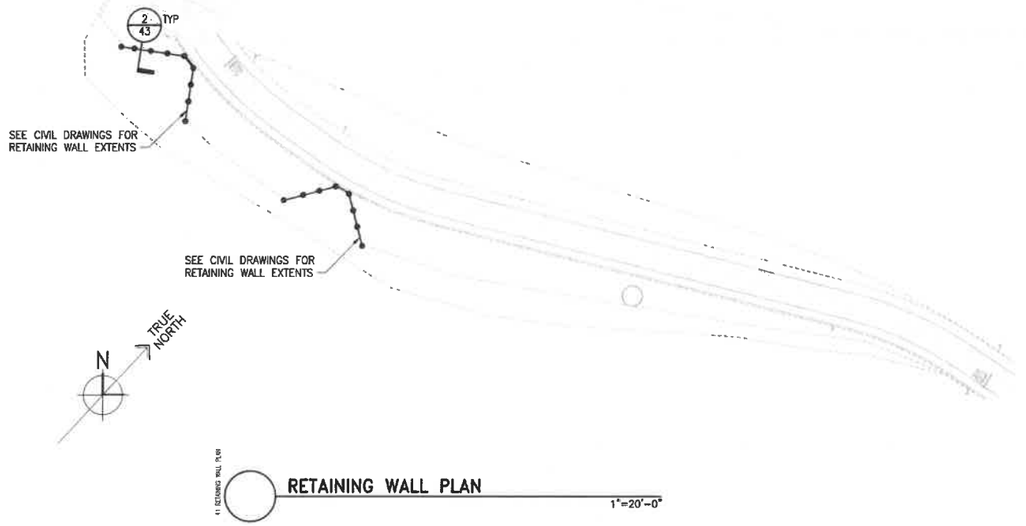

1" RETAINING WALL PLAN

RETAINING WALL PLAN

1"=20'-0"

No.	Revision	Date	By	Chkd

Date: MARCH 28, 2019
Drawn By: CBG
Designed By: SPH

SPECIAL INSPECTION & OBSERVATION

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

BELMONT, CALIFORNIA

ISSUED FOR BID

SCALE: AS SHOWN

SHEET: 41 OF 43

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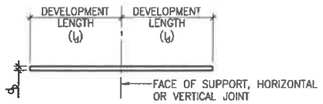
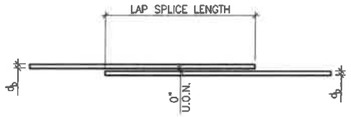
BAR SIZE	DEVELOPMENT LENGTH INCHES (l_d)						LAP SPLICE LENGTH INCHES					
	TOP BARS			OTHER BARS			TOP BARS			OTHER BARS		
	3000 PSI	4000 PSI	5000 PSI	3000 PSI	4000 PSI	5000 PSI	3000 PSI	4000 PSI	5000 PSI	3000 PSI	4000 PSI	5000 PSI
#3	22	19	17	17	15	13	29	25	23	23	20	17
#4	29	25	23	22	19	17	38	33	30	29	25	23
#5	36	31	28	28	24	22	47	41	37	37	32	29
#6	43	37	34	33	29	26	56	49	45	43	38	34
#7	63	**54**	49	48	42	38	82	71	64	63	55	50
#8	72	**62**	56	55	48	43	94	81	73	72	63	56
#9	81	**70**	63	62	54	48	106	91	82	81	71	63
#10	91	**79**	71	70	61	54	119	103	93	91	80	71
#11	101	**87**	78	78	67	60	132	114	102	102	88	**78**

NOTES:

1. REFER TO HOOKED REINFORCEMENT TENSION DEVELOPMENT LENGTH SCHEDULE IN CONCRETE WHEN THE STRAIGHT DEVELOPMENT LENGTH IN TENSION CANNOT BE ACCOMMODATED IN THE CONCRETE SECTION.
2. TABULATED DEVELOPMENT LENGTHS ARE BASED ON REINFORCING STEEL YIELD STRENGTH F_y=60 KSI AND NORMAL WEIGHT CONCRETE.
3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 12 INCHES OF FRESH CONCRETE CAST IN THE MEMBER BELOW THE BARS TO BE DEVELOPED OR SPLICED. THE TOP BAR FACTOR DOES NOT APPLY TO BARS IN WALLS.
4. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED IN TENSION, SPLICE LENGTH SHALL BE THE LARGER OF l_d OF THE LARGER BAR AND LAP SPLICE LENGTH OF THE SMALLER BAR.
5. ALL TABULATED VALUES ARE MINIMUM LENGTHS, IN CASE OF CONFLICT WITH PLANS, SECTIONS, OR DETAILS, USE THE LONGER LENGTH.
6. d_b = BAR DIAMETER.
7. l_d = DEVELOPMENT LENGTH.
8. MULTIPLY TABULATED LENGTHS BY THE FOLLOWING FACTORS WHERE APPLICABLE. NOTE THAT FACTORS ARE CUMULATIVE: (E.G. 1.33x1.50 = 2.0)
   A. LIGHT WEIGHT CONCRETE: 1.33
   B. 3 BUNDLED BARS: 1.20
   C. 4 BUNDLED BARS: 1.33
   D. CLEAR SPACING LESS THAN $2d_b$ AND CLEAR COVER LESS THAN d_b: 1.50
   E. EPOXY COATED BARS: 1.50
9. USE MECHANICAL COUPLERS FOR #14 AND LARGER BARS.
10. FOR LAP SPLICES IN CONCRETE MASONRY, SEE MASONRY REINFORCEMENT DETAILS.



DEVELOPMENT

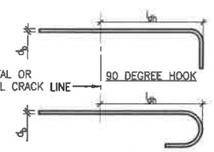


LAP SPLICE

5 STRAIGHT REINFORCEMENT DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE FOR CONCRETE

N.T.S.

BAR SIZE	TENSION DEVELOPMENT LENGTH FOR HOOKED BARS (l_{dh}) INCHES		
	3,000 PSI	4,000 PSI	5,000 PSI
#3	9	8	7
#4	11	10	9
#5	14	12	11
#6	17	15	13
#7	20	17	15
#8	22	19	17
#9	25	22	**20**
#10	28	25	22
#11	31	27	**24**



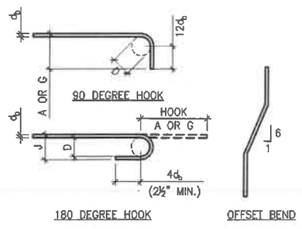
180 DEGREE HOOK

NOTES:
1. SEE TYPICAL REINFORCEMENT BEND DETAIL FOR ADDITIONAL INFORMATION.
2. TABULATED DEVELOPMENT LENGTHS ARE BASED ON REINFORCING STEEL YIELD STRENGTH (F_y=60 KSI) AND NORMAL WEIGHT CONCRETE.
3. ALL TABULATED VALUES ARE MINIMUM LENGTHS. IN CASE OF CONFLICT WITH THE PLANS, SECTIONS, OR DETAILS, USE THE LONGER LENGTH.
4. d_b=BAR DIAMETER
5. l_{dh}=TENSION DEVELOPMENT LENGTH (HOOK BARS)
6. ADJUST TABULATED LENGTHS BY THE FOLLOWING MULTIPLICATION FACTORS WHERE APPLICABLE. NOTE THAT THE FACTORS ARE CUMULATIVE: (e.g. 1.33 x 1.20 = 1.60)
   A. REINFORCING BAR STRENGTH OTHER THAN 60 KSI: (F_y/60,000)
   B. LIGHT WEIGHT CONCRETE: 1.33
   C. EPOXY COATED BARS: 1.20

9 HOOKED REINFORCEMENT DEVELOPMENT LENGTH SCHEDULE FOR CONCRETE

N.T.S.

BAR SIZE	BEND DIAMETER (D) INCHES	180°HOOKS		90° HOOKS
		A OR G INCHES	J INCHES	A OR G INCHES
#3	2¼	5	3	6
#4	3	6	4	8
#5	3¾	7	5	10
#6	4½	8	6	12
#7	5¼	10	7	14
#8	6	11	8	16
#9	9½	15	11¾	19
#10	10¾	17	13¼	22
#11	12	19	14¾	24



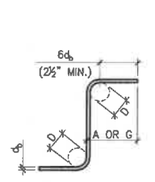
180 DEGREE HOOK OFFSET BEND

NOTES:
1. ALL BENDS SHALL BE MADE COLD AND SHALL BE MADE PRIOR TO PARTIAL EMBEDMENT IN CONCRETE.
2. d_b = BAR DIAMETER.
3. D = BEND DIAMETER, MEASURED ON THE INSIDE OF BAR.

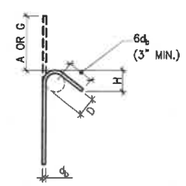
13 TYPICAL REINFORCEMENT BENDS FOR CONCRETE AND MASONRY

N.T.S.

BAR SIZE	BEND DIAMETER (D) INCHES	90° HOOK	135° HOOKS	
		A OR G INCHES	A OR G INCHES	H (APPROX.) INCHES
#3	1½	4	4¼	3
#4	2	4½	4½	3
#5	2½	6	5½	3¾



90 DEGREE HOOK



135 DEGREE HOOK

NOTES:
1. ALL BENDS SHALL BE MADE COLD AND SHALL BE MADE PRIOR TO PARTIAL EMBEDMENT IN CONCRETE.
2. d_b = BAR DIAMETER.
3. D = BEND DIAMETER, MEASURED ON THE INSIDE OF BAR.

11 TYPICAL TIE AND STIRRUP HOOKS FOR CONCRETE AND MASONRY

N.T.S.

No.	Revision	Date	By	Chkd

Date: MARCH 28, 2019
Drawn By: CBG
Designed By: SPN

TYPICAL CONCRETE DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

BELMONT, CALIFORNIA

ISSUED FOR BID

SCALE: AS SHOWN

SHEET: 42 OF 43

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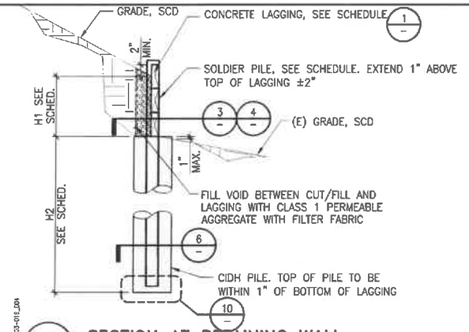
REGISTERED PROFESSIONAL ENGINEER — No. 4015 — 3/29/19 — STATE OF CALIFORNIA

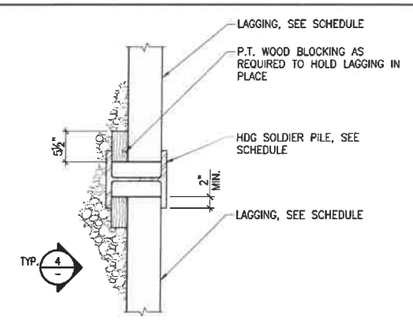
Wall Height H1 (ft)	CIDH Sizes Diameter D (inch)	Max. C.C. Spacing (ft)	Depth H2 (ft)	Soldier Pile Size	Concrete Lagging Size
0 through 2	24	6	10	W10x45	6x12
2 through 3	24	6	13	W10x45	6x12
3 through 4	24	6	17	W10x45	6x12
4 through 5	24	5	18	W10x60	6x12
5 through 6	24	5	20	W10x77	6x12
6 through 7	24	5	23	W10x77	6x12
7 through 8	24	4.5	24	W10x88	6x12

NOTES:
1) AT CONTRACTORS OPTION, ALL SOLDIER PILES MAY BE W10x88.
2) H1 IS THE MAXIMUM HEIGHT OF THE PIER BEING DRILLED, AND THE ADJACENT PIERS.

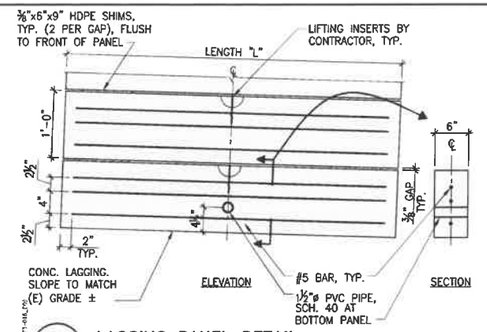
1 RETAINING WALL SCHEDULE — NTS



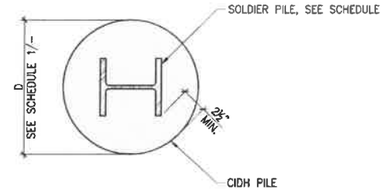
2 SECTION AT RETAINING WALL — SCALE: 3/8"=1'-0"



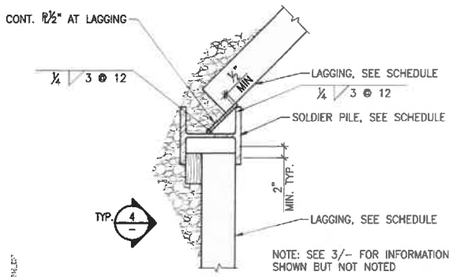
3 RETAINING WALL SECTION AT WALL — SCALE: 1"=1'-0"



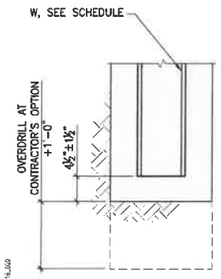
4 LAGGING PANEL DETAIL — SCALE: 1"=1'-0"



6 RETAINING WALL SECTION AT PILE — SCALE: 1"=1'-0"



7 RETAINING WALL SECTION AT SKEWED CORNER — SCALE: 1"=1'-0"



10 SOLDIER PILE SECTION AT BASE — SCALE: 1"=1'-0"

No.	Revision	Date	By	Chkd

Date: MARCH 28, 2019
Drawn By: CBG
Designed By: SPN

RETAINING WALL DETAILS

DEPARTMENT OF PUBLIC WORKS
CORRIDOR IMPROVEMENT PLAN SEGMENT 1 & 2

CITY OF BELMONT
BELMONT, CALIFORNIA

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